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REPORT OF THE COMMITTEE

APPOINTED TO ENQUIRE INTO THE

SANITARY CONDITION OF ALLAHABAD

AND ITS

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IMMEDIATE NEIGHBOURHOOD.

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Allahabad:

PRINTED AT THE GOVERNMENT PRESS, NORTH-WESTERN PROVINCES.

1869.

Station
OF
ALLAHABAD.

Scale 40 Chains or ½ Mile to one inch.

CHAINS. 40 30 20 10 0 1 2 3 INCHES.

Drawn for the Sanitary Commission Allahabad, Sept^r 1869.

REPORT OF THE COMMITTEE

APPOINTED TO ENQUIRE INTO THE

SANITARY CONDITION OF ALLAHABAD

AND ITS IMMEDIATE NEIGHBOURHOOD.

FROM

W. CHICHELE PLOWDEN, ESQ.,

Secretary to the Sanitary Committee, Allahabad,

To

R. SIMSON, ESQ.,

Secretary to the Government of the N.-W. Provinces.

DATED ALLAHABAD, THE 20TH SEPTEMBER, 1869.

SIR,

I HAVE the honour to submit the following Report from the Committee, appointed in Government Orders, No. 81A, dated 25th August last, to assemble at Allahabad, for the purpose of enquiring into the cause of the recent outbreak of cholera at that Station, and of reporting on the sanitary condition of Allahabad and its immediate neighbourhood.

2. In compliance with paragraph 2 of the Orders quoted above, Major-General Travers, V.C., nominated two additional members; and, thus strengthened, the Committee* held their first meeting on the 1st September. On this occasion, Dr. Cuningham, Sanitary Commissioner with the Government of India, was present; and at his suggestion, enquiry was made by telegram whether the scope of the Committee's investigation might not with advantage be confined to the sanitary state of Allahabad and its vicinity. This enquiry was replied to by your telegram of the 2nd instant; and, in accordance therewith, the Committee have limited their labours to the latter point.

*J. F. D. Inglis, Esq., *President.*
W. C. Plowden, Esq., *Secy.*
Dr. C. B. Chalmers.
Lieut.-Col. F. Wright.
Dr. C. Planck.
Dr. Richardson.
} *Members.*

3. I am now to relate the mode in which their investigation has been made, and the results of their enquiries.

4. It would have been of great advantage to the object of the Committee had they been in a position to obtain accurate statistics of mortality in the Allahabad City and Settlement during late years; and it is a matter of extreme regret to them that they have been unable to obtain data of this nature from which they could sa fely draw conclusions. They are not altogether without information of this nature, but the statistics they have either relate to very small groups of persons, as in the case of the European troops, the Railway *employés*, and the convicts in the Jail, or are notoriously untrustworthy, as in the instance of the mortuary returns for the District and City; and, again, in the latter cases the returns have been kept up for a very short period. In both cases it is equally impossible to come to any just conclusions or to generalize from the figures so recorded.

5. Such returns, however, as they have been able to obtain will be found appended to their Report.

6. Finding themselves precluded from resorting to carefully recorded vital statistics—the very best description of proof they could have obtained for the purpose of their enquiry—they have been compelled to rely mainly on the information elicited in the course of examination from the many witnesses—European and Native, official and non-official—who have been good enough to give evidence on the subjects which have engaged the attention of the Committee.

7. During the course of their sittings, 43 witnesses have been summoned, of whom 38 attended and were examined; 20 of these gentlemen were officials on duty at Allahabad, and the remaining 18 were non-official residents of the Station; 24 were Europeans, and 14 were Natives. Of the official witnesses examined, 9 were Medical men, including Native sub-assistant surgeons and doctors; 3 were on the Military staff of the place; 3 were Civil authorities; 2 were on the Clerical establishment; and 1 was an officer of Her Majesty's 58th Regiment. The non-official witnesses comprised 8 Europeans and 10 Native gentlemen, who had been for a greater or less time resident in Allahabad, and who had special opportunities and means for forming opinions on the subject into which the Committee were called on to enquire.

8. In selecting the witnesses to be summoned, the Committee have been desirous to obtain evidence from:—

(*a*) The Medical men employed in Allahabad, including the Native Doctors practising in the City.

(*b*) The Cantonment Authorities charged with the conservancy of the Military Lines and Bazaars.

(*c*) The Civil Officers entrusted with the conservancy of the City and Civil Settlement.

(*d*) The Engineering Staff employed in the Cantonments, Old and New.

(*e*) The European and Native residents of the New Settlement, Cannington, the Railway Lines, the City, and the Old Civil Station.

(*f*) And the Ministers of the various congregations in the place.

9. It will be seen, from the brief notice of the classes of witnesses examined, how far the Committee have attained the object they set before themselves.

10. In the questions addressed to these gentlemen, the Committee have sought to secure information concerning the drainage, conservancy, water-supply, and general health of the residents of the Old Cantonments the Civil Lines and adjacent Bazaars, Cannington, the City, and the New Cantonments and vicinity.

11. They have further endeavoured to ascertain what opinion was held by the several witnesses examined in regard to the healthiness of the Settlement generally, in the present and past years, and its reputation in the matter of health compared with that of other large towns in the Gangetic Doab.

12. With these brief prefatory remarks, the Committee proceed to state the opinions they have formed, both from the evidence before them and their personal knowledge of the Settlement:—

1*st*,—In regard to the drainage;

2*nd*,—In regard to the conservancy;

3*rd*,—In regard to the water-supply of Allahabad and its vicinity.

13. As Allahabad covers a considerable extent of ground, the Committee have, for convenience of reference, recorded their opinion under these three heads, with special reference to the several portions of the Settlement, *viz*., the Bazaars and Civil Lines, the Cantonments (Old and New), Cannington, and the City.

29. *Old Cantonments.*—The conservancy arrangements here cannot be said to be good, though the subject has received attention. The latrines in the immediate vicinity are objectionably situated, the number of conservancy carts is not sufficient, and the admixture of dry earth with the impure matter has not always been effected; consequently, the iron receptacles and the carts are sometimes met on the roads in such a terrible state as to be a very abominable nuisance.

30. Then, again, the impurities, in no way deodorized, have been buried always in too large quantities together, and until latterly in quite large pits, which have been dug in land much too near the Cantonments; and there is a somewhat large area, about half-a-mile to the north-west of the Mansfield Lines, which has been quite pitted over in this way, where a vast amount of undecomposed impure matter now exists. The latrines and urinals of the Mansfield, Clydesdale, and Chatham Barracks, have not been properly kept; perhaps could not be properly kept, from their age and incurable state of filthy saturation. With reference to this point, the Committee would draw attention to the Cholera Report of 1861, signed by Mr. Strachey and Dr. McClelland, in which apparently some of the latrines now referred to are condemned or found fault with, and yet there seems reason to fear that the same old filthy places have been continued in use. Captain Anderson's recommendations in respect to the destruction of these places should be acted on without delay, even if the Old Lines are not again to be occupied.

31. *Civil Lines, including Kuttra.*—The same objections hold with reference to the conservancy of the Civil Lines, Kuttra, and Colonelgunge, as to the Old Cantonments. The nightsoil, though fairly-well collected in properly constructed carts, has not been deodorized, and has been buried in large pits at the same place as, or close to, the Cantonment filth, and with a like result.

32. The public latrines of Kuttra have not been well kept; the latrine complained of by Mr. Mohun is improperly placed; and the lanes of the Kuttra have not been properly conserved, though a very considerable improvement in this respect has been brought about during the past two years. Some of the lanes are narrow, the roadways entirely unmade, and small retiring-places are so frequent, so ill-kept, and so badly placed, that to make Kuttra a healthy place of residence for the inhabitants it would be necessary to remodel it altogether, or to widen the roadways, metal them with kunkur, and forbid the use of corner-places as latrines or urinals. As it now exists, Kuttra is a never-failing source of danger to the health of the European inhabitants of Allahabad; and the same may be safely stated of every collection of Native inhabitations which exists on the tongue of land forming the Allahabad site.

33. Conservancy, also, may be said to be defective in the large Bazaars, and the outlying hamlets adjoining the Old Cantonments and Civil Lines, by reason of the overcrowding of the buildings in them, as well as in consequence of the narrowness of the lanes.

34. The conservancy of *Cannington*, though better than that of the large Bazaars such as Kuttra and Colonelgunge, and though as good as that of the Civil Lines, cannot be said to be other than defective. There are no public latrines, and though owners of houses are obliged to keep up private latrines, yet these are not on a good model, nor are they always well kept. More carts, also, and better supervision, would seem to be required.

35. *New Cantonments.*—Until it was resolved, last April, to occupy the New Barracks with troops, no proper system of conservancy was in existence at the New Cantonments. For about 8,000 workmen employed on the buildings and barracks, very inadequate latrine accommodation had been provided: two latrines only, and two conservancy carts, were kept up for the large number of workmen employed on the public buildings; while for the 5,000 employed on the New Barracks there were none, or next

to none. For years these workpeople had resorted to the ground in the vicinity of, and even between, the barracks for purposes of nature, and the defilement extended, also, in some instances to the interior of the buildings in course of construction. A strip of ground to the eastward of the New Cantonments, and extending towards the Native Infantry Lines, was more particularly polluted.

36. Since April, it is understood that arrangements have been made to secure a system of conservancy which would meet the wants of the coolies and workmen; but it must be difficult thoroughly to control so great a multitude of men, nor can the Committee state that the present number of latrines is sufficient.

37. *City.*—Though the conservancy of the City has during the last few years been greatly improved, it is still in a very imperfect condition, for the work of conservancy has only lately been commenced; nor, indeed, has the system commenced upon been effectually worked, as is witnessed by the filthy nature of the conservancy carts, their traversing the town during the middle of the day, and, until very recently, their location in the public chowk. Ninety cartloads of filth now leave the City daily which formerly must either have accumulated or have been left to be removed by the animal scavengers of a Native city. But this, assuming that each cart carries twenty maunds, which is very much over the mark,* would only allow for the removal of less than one-third of the impurity which must be produced; and an establishment of thirty carts is utterly inadequate to the requirements of a city containing over 100,000 inhabitants. Even if the number of carts was doubled, the work of conservancy could not be effectively done. The condition of the main thoroughfares would seem to be not objectionable, but the back streets and bye-lanes are foul in the extreme. The latrines are not numerous enough; their position, in some instances, in the centre of a crowded locality is to be condemned; and the supervision over the conservancy establishment is insufficient. The cesspools are particularly obnoxious when not regularly cleaned out, and the practice of throwing their contents over the road, which the Committee understand gave rise to a petition from the inhabitants, must have been highly injurious to the health and comfort of the people.

* It is understood these carts can only carry three or four maunds.

38. In considering the present system of conservancy in the City and Station, particularly with reference to the arrangements in force for disposing of nightsoil, the Committee have been struck by the fact, which has been repeatedly brought before them in the evidence recorded, that every part of these arrangements is the subject of reiterated complaint. Objections are raised to the mode of accumulation, to the form and time of removal, and to the manner of disposal. A statement has been laid before the Committee by which it appears that large sums of money have been expended during the past two years for the conservancy of the City. So far the statement is satisfactory as proof that a considerable amount of attention and care has been given to this matter. The Committee also take this opportunity to acknowledge the praiseworthy endeavours in this direction of the officials concerned in the management of the City; but it seems right to consider whether any permanent improvement in the sanitary state of the City has resulted from this large expenditure. That permanent improvement has been effected seems very questionable; indeed, the evidence on this head points all the other way.

39. The Committee consider the existing system of collecting undeodorized impurities in latrines—hateful alike to those who frequent and to those who pass by them—of carrying these impurities in carts to Kurbulla for burial in pits, or the storage of this filth for burning in brick-kilns, is not unlikely to be a cause of sickness. On the whole, the Committee are compelled to condemn the present system of conservancy.

Water Supply.

40. They now pass to the third point in their enquiries. Speaking broadly, it may be said that the water-supply of Allahabad is satisfactory. Drinking-water is good in

quality, and can be procured in any quantity. It is almost entirely derived from wells, and is reached at an average depth of 50 to 65 feet, and the quantity appears to depend on the depth of the well. The quality for potable purposes is generally good, though a few exceptional cases are mentioned where it is said to be brackish and unwholesome. The Committee have no chemical analysis of the water of the place, but the evidence they have taken on this head seems conclusive.

41. In the *Old Cantonments, Civil Lines, and adjoining Bazaars*, the drinking-water is pure and wholesome in the opinion of the Natives, who are no mean judges on this point.

42. In *Cannington*, also, and *the Railway Lines*, it is said to be good and sweet, and in sufficient quantity.

43. In the *New Cantonments*, however, the supply is defective, and, as appears from Mr. Fleming's and Captain Anderson's evidence, only one of the wells sunk supplies water of good quality and in sufficient abundance.

44. In *the City*, the supply is undoutedly abundant, and any defects that may exist arise from the neglect to clean out the wells at properly regulated intervals, and from the ground adjoining them not being carefully conserved. The water itself, apart from such possible causes of pollution, is pure and wholesome. Altogether, the Committee consider that the water-supply of Allahabad is good.

General Health.

45. It will be observed from the evidence recorded, that very different opinions are entertained in regard to the healthiness of Allahabad. Some of the witnesses have asserted that the Settlement as a place of residence is favourable to the health of Europeans; others, that it is not so. Some, again, have expressed an opinion that it has increased in salubrity, while there are others who hold directly opposite views.

46. The Committee approach the subject of the general health of Allahabad with considerable hesitation; but, having regard to the nature of the task imposed upon them, they feel unable to pass by this topic without comment or remark. The principal difficulty which presents itself to them in the discussion of this question, lies in the want of vital statistics extending over any long period, or embracing large groups of facts, which might enable them to form correct deductions regarding the comparative healthiness of Allahabad in the present and former years, or its position among other towns in the Doab, or elsewhere, as a healthy abode for Europeans and Natives. But, as has been already pointed out, official records are sadly deficient in statistics on this subject, and the few returns that are available are of little value for the object in view. Appended to this Report will be found certain returns supplied by Dr. Bryden, Statistical Officer with the Sanitary Commissioner, Government of India, by the Assistant Quartermaster-General of Allahabad, by Dr. Irving, Consulting Physician to the East Indian Railway, and by Dr. Richardson, Superintendent of the Central Jail. These contain accurate statistics of the mortality among the troops, the *employés* on the East Indian Railway at Allahabad, and the large body of convicts imprisoned in the Central Jail at the same place. Excluding the present year, the whole of these returns shew an improved state of health among the bodies of men to which they refer; and it might at first sight be argued from them that, if the troops, the Railway *employés*, and the convicts, can be held at all to represent the European and Native residents of Allahabad, the general health of the community must have improved in a similar manner during the last few years. But the Committee cannot accept such an argument. The convict-residents of the Jail cannot be held to represent the Native community; and though the return of deaths in the British regiments stationed at Allahabad during the years 1859 to 1868 appear *prima facie* to indicate an improving condition of health,* yet no conclusion can be

* During the first five years given in the return, the average deaths per 1,000 strength amounted to 59·25; during the last five years to 30·24. The strength of the garrison fell from 2,500 to 900.

drawn from the statement in regard to the comparative healthiness of the troops in the earlier or in the later years referred to; for the military strength has very largely diminished since the earlier years of the return, while the barrack accommodation has remained the same throughout the period comprised. Though, therefore, it may be said with truth that in the last five years the men have been in better health, and there have been fewer deaths to strength than in the first five years, yet this may be accounted for by the enlarged barrack accommodation which the reduction of the garrison secured to the diminished number of troops. The East Indian Railway return comprises a very small staff, commencing with 130 in 1859, and ending with 327 in 1868; the average strength has been 253. The percentage of deaths on strength has fluctuated very considerably, varying from 1·5 in 1859 to 6·6 in 1863, and coming down again to 1·5 in 1867, and 1·4 in 1868. It will be obvious that no general conclusions can be arrived at from this table.

47. The register of burials, though not uninteresting, is also of no value for purposes of generalization; and the mortuary returns for the town are too inaccurate to be of use.

48. The Committee, having only these returns before them, are unable to offer any opinion in regard to the healthiness of Allahabad having deteriorated or improved. They cannot, however, consider the place healthy, and popular impression assigns to it a very indifferent reputation.

49. Nor are the Committee in a position to come to any conclusions as to the increased liability of Allahabad to epidemics; in fact, they consider it unnecessary for them to advert to this point in the face of the remark by the Sanitary Commission in 1861, that cholera is endemic to Allahabad. There are circumstances, however, which under the most favourable conditions will always tend to assist the introduction of cholera and contagious disease. The junction of the Rivers Ganges and Jumna is a place of pilgrimage much resorted to by Hindoos from all parts, and three lines of rail* converging at Allahabad bring the Tribanee† within easy reach of travellers from Calcutta, Bombay, and Delhi. On the whole, it would appear that, as long as the conditions of Indian climate and disease continue as they are, a town like Allahabad must always be specially liable to epidemics and contagious diseases.

* The first case of Cholera in the present year was an importation by rail.

50. To sum up the results of the Committee's investigations, it may be said of Allahabad and its vicinity that the drainage is indifferent, the conservancy defective, and the reputation of the place in regard to health bad; while against these serious defects can only be placed the one satisfactory fact that the water-supply is good. This being the case, the Committee would venture to make the following recommendations.

51. In the first place, it seems to be absolutely necessary that a systematic scheme of drainage, to embrace the City as well as the European quarter of the Station, should be undertaken. They would not suggest that this should be arranged so as to provide for more than the rain-fall and refuse-water; though it might be desirable to attempt to remove the nightsoil as well as the surface-sewage, if funds for such a work were available and the attempt would fall in with the habits of the people. But both these elements of success are wanting as far as the City, where the mass of the Allahabad population reside, is concerned. In the New Cantonments, however, the Committee would go further than this. From the lie of the land, the drainage of the New Cantonments must be independent of that of the City. The evidence taken has also shewn that the existing water-supply for the New Barracks is insufficient. The Committee, therefore, recommend that for the New Cantonments the drainage should be so arranged as to carry off, not only the waste water, but the sewage of the latrines also. This could be best effected by means of a system of underground drainage in pipes, similar

† The sacred spot where the junction of the rivers takes place.

to that which has been so successfully practised at Aldershott. The levels of the adjacent country, and the abundance of culturable land in the neighbourhood, afford great facilities for the adoption of a measure, important for its value in a sanitary point of view, and also profitable in a pecuniary sense.

52. The Committee will not dwell on the details of the Aldershott system, as these are given at length in the memorandum by the Army Sanitary Commission, dated 8th March, 1869, forwarded to the Government of India by the Secretary of State with his despatch of the 22nd April last; but, as the Aldershott system requires a considerable amount of water, and the present supply at the New Cantonments is deficient, they take this opportunity of suggesting that the requirements of the Barracks, and of the drainage-system they have recommended, might both be met by the construction and employment of such a well as Mr. Graham Peddie describes to be in use at the railway station, and of which a diagram is annexed to this Report.

53. The site of the New Cantonments is of a sandy, porous nature, and has for some years undergone constant pollution at the hands of the workpeople employed. It is, therefore, probable that it is deeply impregnated with organic matter, which, sooner or later, will render the water of the present shallow well impure and unfit for potable purposes. This probability, almost a certainty, supplies an additional reason for the construction of a deep well of the kind described by Mr. Peddie, to be worked, as is that at the railway, by steam-power. This would ensure what for the purpose contemplated would be an inexhaustible supply, not only for the use of the troops and the camp-followers, but to carry off all the sewage of the Barracks.

54. Though the Committee have limited their recommendation to the New Cantonments, and have not gone into the question of the applicability of the Aldershott system of drainage to the City of Allahabad, or any other large town, it may be gathered from the opinions they have already expressed that they are not admirers of the method of conservancy now in force in the Settlement. It cannot be said that the present arrangement is a success. The dry-earth system, and the consequent necessity for the removal of a large mass of deodorized nightsoil, do not fall in with the habits and customs of the Native population. The people are undoubtedly averse to it, and to carry it out thoroughly would entail a very large expenditure. It may be that the principle of the present system might still be adhered to, and with more successful results than attends its present working. It is not impossible that by merely marking off certain spots which in former days have been resorted to by Natives, and by making it compulsory upon those who use these places to follow the Mosaic plan, the feelings and wishes of the Natives might be enlisted on the side of the conservancy arrangements, at a great saving of money, instead of being opposed to the system now partially carried out. But even if this possibility is not Utopian, the fact remains that a large portion of the population, consisting principally of young children and the better class of Natives, will not leave their own premises for the purposes of nature, and a large amount of fæcal matter would still have to be collected, removed, and disposed of in the face of all the existing obstacles to such measures. A well-devised system of drainage, such as is sketched out in the memorandum by the Army Sanitary Commissioner before referred to, might doubtless get over these obstacles; but it would entail a vast expense, and would consequently be at present impracticable. The Committee, therefore, think it sufficient to recommend that no public latrine should be allowed within the City. All these places of resort should be on the outskirts, so that all filth deposited there might be removed without coming into the crowded streets of the town and thus annoying the inhabitants. The latrines themselves, the Committee think, should not be pucka, and should consist of good-sized enclosures, two or three acres in extent, to which the public might retire; a staff of mehters to be retained in daily attendance, and the impurity to be removed further into the country than at present.

It might also be advantageous to try the experiment at one of these enclosures of erecting a properly-constructed furnace and flue with a high chimney, in which the fæcal

matter might be at once burnt and disposed of without removal. The conservancy of large Native towns presents a problem of sufficient magnitude and interest to justify the adoption tentatively of any measure which holds out any reasonable prospect of success. The Committee believe that up to the present time the efforts that have been made in the direction of conservancy, *quoâd* the accumulation, removal, and disposal of fæcal matter, have not been based on a scientific foundation, and that the local authorities have neither recognised nor known the great difficulties that must stand in the way of the dry-earth system as applicable to a large population.

55. On this subject the remarks of the Army Sanitary Commission, already referred to, may be studied with advantage. Paras. 5, 17, and 23 to 29, of the memorandum in question, shew how great must be the obstacles to the dry-earth system in dealing with large masses of people. The mere fact that for a population like that of Allahabad, numbering 106,000 souls, 160 tons of deodorized human excreta will have to be removed and disposed of daily, will indicate to some degree the great difficulties that have to be overcome in this matter, even where funds are available for such expensive operations.

56. The course of their enquiries has led the Committee to the conclusion that a great advantage would be secured if the Magistrate of the District could be relieved of the really important and doubtless onerous duties which devolve upon him in connection with the Municipal arrangements of a large city like Allahabad.

57. This they believe to be peculiarly desirable in this instance, as it is understood that in point of area, population, revenue to be collected, criminal work, and miscellaneous duties, the district of Allahabad is a very heavy charge. When to this are added the existence of a large and ever-increasing European population, the presence of a great Railway establishment and business, and lastly, the late change in the seat of Government from Agra to Allahabad, it becomes evident that the district officer must be more than sufficiently burthened with duties, without imposing upon him the further weight of care and miscellaneous business which cannot but go with the supreme control of the conservancy and municipal business of the Station. An officer charged with all the multifarious details of district work, cannot possibly give that close and undivided attention to the conservancy of a large station like Allahabad indispensable to its due performance and regulation. The Committee would recommend on this head that the City conservancy and municipal arrangements should be made over to the City community—a certain number of the members of the Municipality being invested with magisterial powers to punish breaches of the conservancy rules committed either by the public or by the conservancy establishment. The Committee have good reason to believe that the experiment of entrusting influential Native gentlemen with the management of their own cities, and with magisterial powers for the trial of petty offences committed in their towns, has worked well whenever it has been carefully tried; that the Honorary Magistrates who have been appointed have taken an interest in their work; and that the measure has been popular, enlisting on the side of authority the sympathies both of the masses and of the better classes by whom it is carried out. To the latter it gives the dignity of position, while the people are enabled to get their cases decided quickly and on the spot, without being put to the trouble and delay of attending the Magistrate's Kutcherry, generally at some distance from the town. On this point, the Committee would refer to the remarks made by Baboos Preeonath Bose and Khetter Mohun Ghose in reply to Questions 315 and 318.

58. The Committee would also recommend the appointment of a Joint Magistrate, who, under the Magistrate of the District, should have charge of the Civil Lines, Cannington, and the City, and should be specially charged with the superintendence of their conservancy; in fact, an officer who should correspond with the City Magistrate of Lucknow—an appointment, which has been found necessary in a town with a far smaller European population than Allahabad.

59. There are other subjects which, in the opinion of the Committee, require early attention.

60. The evidence they have taken has shewn incontestably that to allow further building in the rear of the New Barracks would be a grave mistake. If available for the purpose, the staff officers' houses yet unbuilt might be constructed on other land to be taken up and added to the present area; but the present site is already overcrowded, and no further buildings whatever should be allowed. As accommodation must be provided for a certain number of the camp-followers, it might be advisable to locate them to the south-west flank of the New Barracks, at some little distance therefrom and adjoining the Cawnpore Road. Every bazaar constructed should, however, be built on a regular plan, so as to ensure free ventilation and conservancy, important points which in ordinary bazaars are quite unattainable.

61. The tendency, ever increasing, to overcrowding of habitations, by which the Committee refer rather to overbuilding than to the number of persons residing in each house, must be checked also in other directions.

The outlying hamlets in close proximity to the Cantonments and Civil Lines are pregnant with danger to the health of the inhabitants. There reside in ill-built, ill-ventilated huts, surrounded often by animals herded in yards reeking with filth—a crowd of ill-fed human beings, amongst whom contagious disease and epidemic do terrible and constant execution.

62. In many instances these diseases are propagated among the European residents from these very hamlets; and cases have not infrequently occurred where servants come to their morning work having just left relations or friends dying of cholera; where cook boys, after sleeping in huts where persons lie dying or dead of cholera, go straight to the Barracks and cook the soldiers' breakfasts; and where Native ayahs and nurses, after visiting or nursing a child sick with small-pox in their own huts, return at once to tend their mistresses and the children of their employers.

63. The Committee consider it would be of great service to the health of the whole community if the outlying hamlets round about Allahabad were removed. This, however, cannot be done without hardship as long as cultivation is allowed to extend in the neighbouring khadir lands up to the limits of Cantonments and the Civil Lines. It is an object, in the opinion of the Committee, to put a stop to the cultivation of these low lands; and they would recommend that the growth of garden-stuff and vegetables only should be allowed within a certain distance of the City, and that the whole of the land within the peninsula should be kept for grazing and garden purposes only. This would at once render it possible to remove the outlying hamlets, at present so great a source of danger in times of epidemic disease.

64. In connection with this point, the Committee would also suggest that measures should be taken to eject the squatters who have hutted themselves around Cantonments, and to throw down their huts.

65. Akin to the subject of the removal of the outlying hamlets, is the improvement of the two great Bazaars (which might more appropriately be termed towns), Kuttra and Colonelgunge. These require to be entirely remodelled and reconstructed on a regular plan, which should allow of widening the side-streets, and otherwise opening up this foul and thickly-populated quarter, situated in the very centre of the Station, and as great a source of danger to health as the hamlets or the outskrits. It is a question whether Kydgunge is not injuriously affected by the neighbouring cemetery. Whether that be so or not, the cemetery should at once be closed to all but residents of the Fort.

66. It would be of importance, also, to provide against further building on the old sites in Cannington. Land is becoming so valuable there, and the demand for

houses so increases, that in some instances sites (already very small) originally intended for one house have been sub-divided so as to permit of two buildings being erected. It is quite within the power of the Collector who grants these sites to prevent abuses in this direction, and the Committee commend the subject to the attention of His Honor.

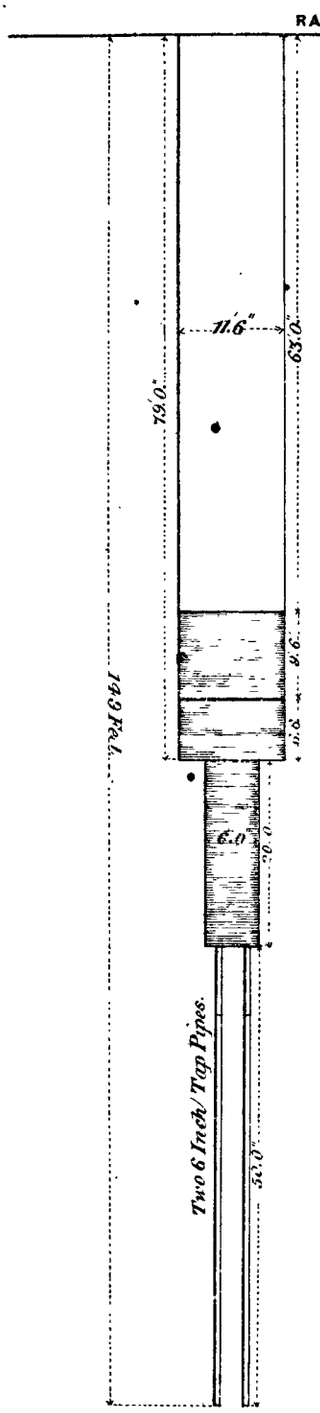
67. The Committee, in concluding their Report, have to thank the gentlemen, European and Native, whose evidence has assisted their labours ; and they have also to acknowledge their obligations to Major-General Travers and the Government officials to whom they have had to apply for returns and statistics; also to Mr. Graham Peddie and the authorities of the East Indian Railway, for the information which they have supplied from their records.

J. D. INGLIS, *President.*
W. C. PLOWDEN,
C. B. CHALMERS, M.D.,
T. WRIGHT, LIEUT.-COL., } *Members.*
C. PLANCK, M.D.,
J. RICHARDSON, M.D.,

I have the honour to be,
SIR,
Your most obedient Servant,
W. C. PLOWDEN,
Secretary.

Diagram of the Deep Well
at the
RAILWAY STATION, ALLAHABAD.

The Pumps are Worked by Steam Power.



Average Level Hot Season 1869.

Level of Water when pumping ceased after 7½ hours working.

NOTE. *The Pumps raise about 10,000 Gallons per hour, and the Engine which is of a nominal 8 horse-power consumes half a Ton of Coals daily.*

Scale, 20 feet to 1 inch.

0 10 20 40 60 80

Q. 4.—On what grounds do you state that the whole of the peninsula on which the Cantonments are built is saturated with the accumulated filth of centuries?

A.—The great population surrounding the Old Cantonments of Allahabad, to which must be added the vast number of strangers who daily enter it from the Oudh and Banda Districts, and the pilgrims, must relieve nature somewhere. The latrines are not numerous or large enough for them; besides, very many object to enter latrines. Again, latrines are of recent origin. I do not confine my condemnation of the sanitary arrangements to the wide and leading streets; these are all fair enough. But, on pushing through the narrow and tortuous lines, from almost every house can be observed a foul stream, the composition of which I need not describe.

Q. 5.—Do you consider the sanitary state of Allahabad to be worse than that of other Cantonments or of other large cities?

A.—I cannot conceive the sanitary state of the City of Allahabad to be very different to that of other large cities. The Old Cantonments are considered about the most unhealthy in India, and I quite agree in the general opinion.

Q. 6.—If so, will you state the grounds of your opinion *in extenso?*

A.—No Cantonments in India with which I am acquainted are so scattered and irregular, so shut on all sides by bazaars and cities, tanks, &c., &c., and by two large rivers. The very form and nature of the locality being almost insulated, its dense population, and subjected to a constant influx of strangers, render it more liable to be defiled than any other station in the country.

Q. 7.—What remedies would you suggest?

A.—Complete removal to a more healthy situation. It would have been premature on my part to have recommended any very sweeping and expensive improvements till I had become assured by close and long-continued observation that the reputation which Allahabad has, I may say, universally obtained for unhealthiness was thoroughly deserved. Further, I considered it would have been unwise to give unnecessary trouble by recommending impracticable improvements—impracticable from their difficult and costly nature.

Q. 8.—In your 13th paragraph you speak of the sanitary condition of the Allahabad Cantonments. By "Allahabad Cantonments" what do you refer to?

A.—I refer to that portion of the peninsula bounded on the west by a line drawn direct south from Nawada (on the inundated low ground of the Ganges) to the Jumna; and to a strip of land lying between the road running west of the new Government Offices and the east boundary of the New Cantonments, extending from the left flank of the Railway Station Lines to the Cawnpore Road. This is as near as I can fix it.

Q. 9.—What renders this strip of land injurious to the general health of the neighbourhood?

A.—The fact of its having been resorted to by all the Natives employed on the new public buildings in the vicinity before I wrote my report.

Q. 10.—You have stated that you consider the whole peninsula unhealthy. Can you point out any places especially bad?

A.—The City, Daragunge, and the large Bazaars, and Colonelgunge, and their vicinity, are especially bad in a sanitary point of view.

Q. 11.—Do you think these could be improved by drainage or other measures?

A.—I have no doubt they could be improved, but at a very considerable cost.

Q. 12.—What measures could be taken, do you consider, to improve their condition?

A.—Pulling down and reconstruction of houses and streets, widening streets, underground-sewerage, and a good and efficient conservancy establishment.

Q. 13.—If these measures were carried out, are you of opinion that the sanitary condition of the Settlement would be effectually improved?

A.—No, I am not. The ground is so saturated with filth that nothing could effectually improve the condition of the Settlement, so far as to make it a fit residence for British soldiers.

Q. 14.—In what points do you think the present sanitary arrangements in the places referred to in your answer to Q. 10 are defective?

A.—Inefficient drainage, deficient conservancy arrangements, the description of buildings and streets, insufficient means of ventilation—(by description of buildings and streets, I mean the overcrowding they occasion),—and I may add, the peculiar and indelicate habits of the Natives.

Q. 15.—Have you had to find fault with the conservancy arrangements of that part of Cantonments occupied by troops?

A.—Not particularly with reference to Cantonments, which have been kept as clean as circumstances would admit. But I have had to find fault with the conservancy arrangements in the vicinity of Cantonments.

Q. 16.—Have you brought these defective conservancy arrangements in the vicinity of Cantonments to the notice of the authorities?

A.—Yes, I have; but not all.

Q. 17.—In what way, to whom, and with what result?

A.—By writing through the Quartermaster-General to the General Commanding. There has been some delay. My recommendations have been partially carried out. My recommendations were made before I wrote my report of the 23rd June, 1869. Some of my recommendations referred to land in and around the New Cantonments.

Q. 18.—What part of the Settlement do you refer to in para. 13 of your letter in the following words—"And, latterly, to the vast numbers of workpeople employed, who, unheeded and unchecked, defiled the whole surface of the country far and wide?"

A.—I referred chiefly to that portion of the Settlement in the vicinity of the New Cantonments. To be more precise, to that strip of land which I spoke of in the last portion of my answer to Q. 8.

Q. 19.—Has the land in the New Cantonments been defiled by workpeople?

A.—It has to some extent.

Q. 20.—What do you comprise in the Settlement referred to in A. 13?

A.—I refer only to that portion of the peninsula bounded by a line drawn direct south from Nawada on the inundated low ground of the Ganges to the Jumna.

Q. 21.—Have you any idea where the workpeople reside who come daily to work on the public buildings?

A.—I think they live in the cities, towns, and villages in the neighbourhood.

Evidence of M. H. COURT, ESQ., *Commissioner, Allahabad Division.*

Q. 22.—How long have you been on duty in Allahabad?

A.—On and off since 1854.

Q. 23.—Be good enough to give the Committee your opinion as to the present and past state of the City and Cantonments, with special reference to their condition having deteriorated or improved?

A.—Within the Cantonments and Civil Lines (in which I include that which formed the Cantonment and Civil Lines before 1857), and likewise throughout the City and its main suburbs, Daragunge, &c., I have no hesitation in saying that their condition is vastly more clean than it used to be. Latrines have been built both of

a permanent and removable character. The sweepings of the streets, the contents of the permanent latrines, are now moved away every night, and buried or otherwise disposed of; whereas the population used in former days to resort to the fields for the purposes of nature. The movable latrines consist of tatties built upon culturable land, scattered about in the neighbourhood of the town, and the contents of those latrines are buried on the spot; when the latrine has been trenched all over, the tatties are taken up and moved to another spot. Several holes, including large tanks, have been filled up. An expenditure of Rs. 40,000 a year is now expended, whereas Rs. 4,000 formerly was not available for expenditure; and as far as cleanliness is concerned, no doubt but that very vast improvement has been effected in the Old Station. I think the sickness that has appeared the last few years may have been caused by the greater number of Native population living in the small agricultural villages which are found round about the station, *e. g.*, Bhujarah, Sadiabad, Siloree, and others. These are certainly very filthy, and caused by the great increase of population, and perhaps more particularly of much cattle. I believe it is an ascertained fact that cholera generally, if not always, commences in the South Cantonments and in the Clydesdale Barracks. The ravages of this disease have only been noticed lately, excepting in so far as Europeans are concerned and before 1857, it was noted that a death by cholera almost annually occurred in the houses which now adjoin the Clydesdale Barracks. There is a long, deep nullah which now runs from Cannington, immediately to the west of the Mansfield Sudder Bazaar, and thence between the Clydesdale and Kuttra Lines, running out across the Fort Road under the Commissioner's Office. Between the Cantonments and this Fort Road, the nullah runs close to the Colonelgunge Bazaar, and do what you will, filth will accumulate in that. A very large area is drained by this nullah, and the whole drainage of the nullah is unable to escape altogether from the Settlement. It accumulates round about the junction of the Buksee and Ganges Bunds; and on the first appearance of rain and of east wind, as cholera breaks out along the course of the nullah, I am inclined to think that it may have its origin in this source. With the exception of epidemics, I do not consider the health of the Settlement is worse now than it used to be; on the contrary, I consider it to be as good as it used to be. But I do not feel competent to give an opinion on this point.

Q. 24.—Do you think epidemics are of more frequent occurrence?

A.—Looking to the past, I think epidemics have appeared to a greater extent in wet years than dry. I can't give an opinion as to epidemics being of more frequent recurrence.

Q. 25.—How do you think the nullah you refer to as a possible cause of cholera should be treated with a view to obviate its ill-effects?

A.—I think the nullah might be improved by scarping the sides and levelling the bed, making it firm and even; but I do not think this would be an effectual remedy until the water drained by it, and by other channels from the City into the low lands falling within the Ganges and Jumna bunds can be drained off.

Q. 26.—Dr. Thompson has referred to certain places as having been defiled by the numbers of workpeople employed on the public buildings. Do you consider this ground has been so defiled?

A.—Yes; I consider that portions of the ground in question have been defiled.

Q. 27.—Dr. Thompson has stated that nothing could effectually improve the condition of the Settlement, *i. e.*, the portion of the peninsula east of the line drawn from Nawada direct south to the Jumna, so far as to make it a fit residence for British troops. Do you agree with him?

A.—I do not.

Q. 28.—Do you think the conservancy arrangements in the City, Daragunge, and the places referred specially to by Dr. Thompson, are very defective?

A.—I do not think they are defective. I think they are sufficient for the purposes of the present system of conservancy, *i. e.*, the collection, and removal, and disposal of filth. I think the present system is wrong, and capable of improvement. The filth produced by the large population, and by the number of cattle within the Settlement, is too large to be safely disposed of by burial only. It should be removed altogether to a distance, or more effectually destroyed. I think the mode in which the filth is buried near the Mansfield Cemetery is very dangerous.

Q. 29.—Before 1857, when you were Magistrate, were there then any conservancy arrangements in force?

A.—Plenty of pigs and two latrines. I consider pigs the best conservators of cities, as far as the wants of the Native population are concerned, in the absence of scientific arrangements. In Cantonments, and in the Civil Station, and in the City and Bazaars, the present conservancy arrangements are considerably better than what formerly existed.

Q. 30.—Do you consider the surface-drainage of the City of Allahabad and its neighbourhood is faulty?

A.—In the part of the City of Allahabad south of the Grand Trunk Road, and as far as Bahadurgunge to the east, drainage into the Jumna river, *i. e.*, natural surface-drainage is easy, and water runs off to the Jumna, formerly naturally, and now along artificial drains which are not completed—not in course of completion. North of the Grand Trunk Road, by Dondeepore, Padshad Mundie, &c., the slope of the country is eastward towards Kydgunge. At Kotaparcha, the fall of the country comes into land six feet below the level of the Jumna bund, and the drainage, unable to escape into the Jumna, still flows eastward and accumulates in the neighbourhood of Kydgunge Cemetery and the adjoining village. In this latter part the drainage is bad. In the first portion it is good.

Q. 31.—Do you think the Kydgunge Cemetery is properly situated with reference to the health of the people in its neighbourhood?

A.—The neighbourhood of a cemetery is always objectionable. In this particular case the ground is low and swampy, and close to a large and crowded suburb. The cemetery is nearly full of graves. I should recommend its being closed to all but people in the Fort and its neighbourhood.

Q. 32.—Do you consider Allahabad a healthy station, compared with other stations in the Doab, in regard to European residents?

A.—In my opinion it is. Allahabad used to be reckoned a healthy station, except the Fort, where fever prevailed, and I don't consider it is less healthy than it used to be.

Evidence of JAMES IRVING, ESQ., M.D., *Civil Surgeon, Allahabad.*

Q. 33.—How long have you been resident at Allahabad?

A.—Sixteen years, except 20 months from 1862 to 1863.

Q. 34.—Be good enough to give the Committee your opinion as to the present and past state of the City and Cantonments, with special reference to their condition having deteriorated or improved in a sanitary point of view.

A.—I think the sanitary condition has very much improved. No man has ever taken more trouble in this matter than the present Officiating Collector.

Q. 35.—Do you think epidemics are of more frequent recurrence?

A.—I think they are. But for some time after I first came here, there were no European troops, and therefore epidemics were less noticed.

Q. 36.—Do you think the place is as healthy as it used to be with reference to diseases not epidemic?

A.—I cannot reply accurately to this question, as I have no data; my impression is it is very much the same.

Q. 37.—Do you consider the present conservancy arrangements, (1) in the City, (2) the bazaars, and (3) the Cantonments are defective?

A.—I do not; I think the present system employed excellent in principle. But there is a want of funds to permit of a sufficient number of carts being employed to carry away the filth. I refer now to the City. As to the Bazaars, as far as I know, they are well enough. I don't know much about the Cantonments. From what little I do know as a resident of Cantonments, I believe the arrangements there to be good.

Q. 38.—Do you think the small lanes of the City are very much neglected in point of cleanliness or conservancy?

A.—I do not think they are as clean as they ought to be in some instances. But they are as clean as it is possible to make them with the funds which the Municipality have at their command.

Q. 39.—Have the public latrines been clean and free from offensive odour?

A.—Yes, generally so, as I have observed when I have passed in their neighbourhood. From time to time I have gone into some of them, and have generally found them well looked after.

Q. 40.—In your opinion, is the water supply for the general population pure and wholesome?

A.—I think it is. But as I have never examined the water chemically, my opinion is not of much value. It is based upon what the Natives tell me.

Q. 41.—You state that epidemics have been, in your opinion, more frequent during late years. To what special causes do you attribute this increased frequency?

A.—I cannot say.

Q. 42.—Do you think it is in any measure attributable to the increased facility for travelling by rail?

A.—I have no means of forming any opinion on the subject.

Q. 43.—With reference to the concluding portion of Mr. Court's answer to Q. 23, regarding a nullah as the cause of cholera, will you state what your opinion on the subject is?

A.—It has never struck me as being the cause of cholera.

Q. 44.—Do you consider the nullah referred to by Mr. Court is prejudicial to health in its present state?

A.—All nullahs are said to tend to unhealthiness; and this, if dirty, as I believe it to be, must be prejudicial to health.

Q. 45.—Have you observed any excavations and collections of stagnant water in the vicinity of the Railway Terminus and embankments leading to the Jumna Bridge, the existence of which might be considered prejudicial to health?

A.—Yes, I have; but I think these excavations hold the water for so short a time that they are not likely to do much harm.

Q. 46.—Are you of opinion that it is advisable to permit these excavations to exist in preference to their being filled up or drained off?

A.—I think it would be very desirable to fill them up; but I believe it to be impossible from their size and depth, and from the difficulty in getting earth to fill them.

Q. 47.—In your opinion, has the concentration in Allahabad, during late years, of Head-quarters of Departments, Civil, Military, and Railway—attended as it has been by an increase in the population, Native and European—exercised an unfavourable influence on the health of the Settlement?

A.—I cannot answer positively; I think it possible it may have led to crowding in the City.

Q. 48.—Do you think the population, both European and Native, has increased since European troops were first cantoned in Allahabad?

A.—I believe it has.

Q. 49.—Do you think it probable that the sanitary condition of the peninsula has deteriorated in consequence?

A.—I would not say so of the peninsula; but I think it possible that the sanitary condition of the City may have deteriorated if there has been overcrowding.

Q. 50.—Certain tanks and refuse-heaps have been pointed out by Dr. Thompson considered to be sources of disease; will you give your opinion on this subject?

A.—I know all the tanks you have named. I never heard of their being sources of disease. The tank on the Fort Road, right side of the road, could not possibly, in my opinion, be a cause of disease, as it holds water the whole year. Refuse-heaps, where they exist, are likely to be a cause of disease. I have occasionally observed refuse-heaps in and around the Colonelgunge and Kuttra, and I have taken steps a get them removed. I am not aware of any refuse-heaps being allowed to remain permanently.

Q. 51.—Do you approve of the situation of the Kydgunge Cemetery?

A.—It is objectionable, according to modern ideas, on account of its proximity to human habitations.

Q. 52.—Are you aware what measures were in force, before European troops were cantoned here, for effecting the conservancy of the City and Cantonments?

A.—I don't think there was any regular system of conservancy. I think inhabitants of houses were left to dipose of their own filth. No carts certainly were provided. A certain number of sweepers were retained for sweeping the dust off the roads. There were no public latrines. I believe that pigs did most of the scavengering work.

Q. 53.—What practical measures might in your opinion be taken to improve the sanitary state —(1) of the City, (2) the Bazaars, (3) the Cantonments?

A.—I think the present system is good in principle, but requires to be carried out to the full extent—*i. e.*, there should be an ample establishment kept up to remove all filth, the liquid filth as well as other. I believe in Cannington the present establishment is sufficient, but in the City there is a want of establishment, and so also in the Bazaars. I can't say whether the establishment kept up in Cantonments is sufficient or not. The surface-drainage in the City has been partially carried out, but requires to be completed, not only in the main street, but in the gullies and back streets. The drainage is very bad in regard to surface-water, which washes down from Cannington towards the Fort; but I believe this subject is to be taken up by the Government engineers. Until they do take it up, the permanent Railway drainage is stopped. The Railway are prepared to make their permanent drainage when the Government system is organized; but they cannot commence till the Government begins. I have more than once written to the Railway authorities on this subject, and this is the answer I got. If a proper system of drainage were carried out it would tend to improve the health of the place.

Q. 54.—The filth from Cantonments is buried near the Mansfield Cemetery. Do you think this dangerous to the health of the residents in the neighbourhood?

A.—I have often thought where the filth was deposited was objectionable: that the filth was buried too near to the residences. Before the place was fixed, I proposed that it should be carried to a spot at least three miles from the station, and buried in shallow trenches—not in pits. In June last, you could often notice the effluvia from these pits when passing on the Cawnpore Road.

Q. 55.—Do you consider that the uncleanly state of the villages, small agricultural hamlets, also the temporary hutting of workpeople and labourers in and about Cantonments, to have a prejudicial effect upon the health of the residents?

A.—I consider them as tending that way.

Q. 56.—Dr. Thompson has stated that nothing could effectually improve the condition of the Settlement, *i. e.*, the portion of the peninsula east of the line drawn from Nawada direct south to the Jumna, so far as to make it a fit residence for British troops. Do you agree with him?

A.—I do not agree with Dr. Thomson.

Q. 57.—Do you consider Allahabad a healthy station, compared with other stations in the Doab, in regard to European residents?

A.—A reference to the Army Medical Reports will answer this question in so far as troops are concerned. I believe they will show that Allahabad is about the worst.

Q. 58.—From your experience as Medical Officer here, do you consider Allahabad favourable to the health of European residents?

A.—I have got charge of the East India Railway, which gives me the means of observing the health of over 300 Europeans and East Indians, with their wives and families. The health of these, as a general rule, is good; and the mortality small, as compared with that of residents of India generally. I think the health of residents in the Civil Lines also is good.

Q. 59.—You state the health of the troops here to be worse than that of those at almost any other station in the Doab, while the health of the Railway people is better than the average health of the same people in India. How do you account for this?

A.—I cannot account for it, unless it be that the men employed in the Railway have got rooms of their own, have got plenty of exercise, and feed themselves according to their own fancy.

Evidence of MAJOR F. H. HANMER, *Cantonment Magistrate, Allahabad.*

Q. 60.—Are you responsible for the conservancy arrangements in Cantonments?

A.—Yes. I am for those in the New and Old Cantonments.

Q. 61.—Will you be good enough to describe what the conservancy arrangements are in these places?

A.—An establishment is kept up for keeping clean the latrines in Cantonments and the Military Lines, and the Cantonment Bazaars and the Fort. This includes eleven carts for carrying away the filth from these places, and an establishment of bildars for digging trenches in which to bury the filth carried away, overseers for supervision, bhiestees for flushing the drains in the Fort, and two boatmen for removing carcases and corpses from the river eddies below the Fort walls, also sweepers for cleaning away the filth. The system is to remove all impurities without delay in the carts provided; and to bury this filth and sweepings in certain places, decided on by the Cantonment

Magistrate in conjunction with the Quartermaster-General, outside Cantonments. During the dry season, a great portion of the filth is carried down to the brick-kilns at Alopee Bagh, and there brunt. This practice cannot be carried out in the rainy season. I have been here since 1866. There was then one set of pits in use in front of the burial-ground near Rajapore, *i. e.*, the back of the Police Lines. These were circular pits about six feet in depth and over six feet in diameter.; but I am not certain of the diameter. I found it was impossible to close them properly, as earth thrown on the top sank though the filth, leaving the latter still exposed, and causing a great nuisance and effluvia. I altered this not many months after I came, probably about the commencement of the cold weather, 1866. In the old arrangement, I substituted narrow trenches from three to four feet deep. These, as a rule, were about sixty feet long; and at intervals of six feet, from nine inches to one foot of earth was left untouched, so as to divide the whole length of the trench by a series of partitions. The excavated portions of the trenches were filled with the refuse brought, to within a foot and a half of the surface of the ground, and the excavated earth then piled up on the filth put in. This arrangement is found to prevent the earth thrown on the top from falling through the filth, and as soon as the filth deposited is thus covered up by the excavated earth, no effluvia is perceptible. A bildar is in attendance constantly, to cover up the filth as soon as the carts bring it. These trenches are kept ready excavated. I get the ground for nothing. As fast as a set of trenches is filled in, the cultivators make use of the land for their crops. They find the land improved by what has been done. Within ten months we can use this ground again for pits—at least, that is what the cultivators say—and in the meanwhile the cultivators have had a crop off it. The trenches I speak of are not in the same place as the old pits; they are now on the high land to the north of the Mansfield Cemetery. This land is not subject to inundation. All the filth from Cantonments is not buried here. That from the Chatham Lines, and adjacent houses, is buried to the north of the cemetery behind the Commissariat Bungalow. This provides for all the filth from the private houses between the Native Garrison Hospital and the Commissariat Bungalow; also for the Press Barrack, No. 6. Altogether, there are four separate places where the filth is buried. The same system is observed throughout.

Q. 62.—Are any of the Municipal pits near those under your management?

A.—Yes, there are some near Rajapore; but there is no mistaking one for another. I don't know if these are prepared in the same way as those under me.

Q. 63.—Have any complaints been made to you of your own pits?

A.—No.

Q. 64.—Have any been made about the Municipal pits?

A.—Not exactly about the pits; but one complaint was lately made to me that the buckets containing filth were deliberately upset in the Rajapore nullah, and that the filth was not taken down and buried. This I believe only happened on one occasion; as, if there had been any recurrence, I am confident I should have heard of it, and I never did hear of it again.

Q. 65.—You state that the filth from Cantonments is buried outside Cantonments. Is the Civil Surgeon consulted, or any other Civil Officer, as to the selection of the places where the trenches are dug?

A.—No; the Civil Surgeon is not consulted, but I bring all these questions before the Cantonment Committee, of which the Civil Surgeon and the Magistrate are members. If they did not attend the Committee meetings, they would not know of these cases. I am not aware that Dr. Irving has objected to the situation of these Cantonment trenches near the Mansfield Cemetery.

Q. 66.—In your opinion, does the establishment you have described suffice to ensure a satisfactory state of conservancy in the Cantonments?

A.—Yes, it does; and I base this opinion on the reports received weekly from Heads of Departments in Cantonments, now on the table, commencing from 15th May, 1869, and up to date.

Q. 67.—Do you know what is done with the filth which is taken down to the brick-kilns to be burnt?

A.—It is delivered daily to a contractor at the kilns, for the whole of the year except the rainy season. It is only from the Chatham Lines, and that portion of the Station, that this filth is carried to the kilns. I am not going to sell it again, as I find it cheaper to buy the filth in the trenches than to deliver it at the kilns.

Q. 68.—Will you state the arrangements in force for keeping down rank vegetation in the Cantonments?

A.—The parade-grounds and other open places are leased out to contractors for grazing purposes. This is found to keep down the rank vegetation; and the contractors are under engagements to remove all the cattle-droppings, and fill up holes made by buffaloes wallowing. In regard to the compounds of houses in Cantonments, whenever high grass or vegetation is found it is ordered to be cut down. No high crops are allowed to be grown within Cantonment limits.

Q. 69.—Do you consider the drainage of Cantonments to be effective?

A.—Yes, I believe it is, as far as I can see.

Q. 70.—Looking to the scattered nature of the Cantonments and Fort, for the conservancy arrangements of which you are responsible, can you exercise an efficient supervision over so large an area?

A.—Yes, with the assistance of the Bazaar-Serjeant, who is a most indefatigable man.

Q. 71.—Has it ever come to your notice that certain places in Cantonments, or their neighbourhood, are daily defiled by the Native inhabitants?

A.—Yes; the people commonly resort to the fields and nullahs in the neighbourhood of Cantonments, as they do in other stations.

Q. 72.—Do you have reason to complain of the tank at the corner of the Bank of Bengal?

A.—Not at present; it has been cleaned on my application, about the beginning of this rainy season, to the Municipality. But before that, rubbish had been shot into this tank, probably taken from the Kuttra—about six gharee loads. This was not of usual occurrence. The tank itself is not in a good state. It has a quantity of green scum on it, and in the evening a bad odour is occasionally perceptible from it. There is also another tank opposite the Agra Savings' Bank, chiefly used in the dry weather as a latrine, and of which I have heard complaints. I don't know of any offensive tanks about Colonelgunge or the Kuttra. There are standing-orders, which are published at the commencement of every rains, that any dhobees washing in any of the tanks will be punished; and I have myself fined several dhobees on this account. I don't think the tanks on the Fort Road are offensive; certainly not that on the right-hand side, which is one of the only tanks in Allahabad I know of that retains water all the year round.

Q. 73.—Do you consider the Old Cantonments to be defective in a sanitary point of view?

A.—I am not able to give an opinion on this point?

Q. 74.—Do you know of any nullahs which are likely to be injurious to the health of the Cantonments?

A.—No, I don't know of any. They appear to be pretty clean.

Q. 75.—Dr. Thompson has stated that nothing could effectually improve the condition of the Settlement, *i. e.*, the portion of the peninsula east of the line drawn from Nawada direct south to the Jumna, so far as to make it a fit residence for British troops. Do you agree with him?

A.—No; I don't see why it should not be a proper residence for British troops. I say this from general results. The 107th Regiment were here when I first came, and there was no mortality among them calling for remark. The Artillery, too, have always been healthy.

Q. 76.—Do you consider Allahabad a healthy station, compared with other stations in the Doab, in regard to European residents?

A.—Yes; most decidedly.

Q. 77.—Do you approve of the situation of the Kydgunge Cemetery in a sanitary point of view?

A.—That is a question I can't answer.

Evidence of CAPTAIN GREGSON, *Assistant Quartermaster-General, Allahabad.*

Q. 78.—How long have you been at Allahabad?

A.—I came here on the 15th September, 1868.

Q. 79.—Have any complaints been made to you regarding the conservancy arrangements of Cantonments?

A.—Of the Old Cantonments, none; of the New Cantonments there have been complaints. The complaints were made after the New Barracks had been occupied by left wing, 58th Regiment. They were only occupied from 17th to 20th April. The complaints related to the workpeople employed having made use of the ground for the purposes of nature, and reached me after the wing went out. Dr. Thompson also complained of the land immediately behind the New Military Cantonments for the same cause. These complaints were made by the Officers of the 58th, and only related to the ground having been fouled. Complaints were also made of the drainage arrangements of the bath-houses, and of the want of bhiestees who were not in sufficient numbers. The regiment had the ordinary establishment; and on these complaints being made, more bhiestees were entertained. Thirteen temporary latrines were established round the Barracks, and arrangements were made to oblige the people to go into them. The Cantonment Magistrate was also directed to have the land complained of cleaned up. This was done under his orders and out of the Cantonment funds. I am not aware how this was done, or that the Police superintended the cleansing of the land complained of. Dr. Thompson made no official complaint of the state of the land before the Barracks were occupied. I will give the Committee a copy of the complaint made by Dr. Thompson regarding the land near the rear of the New Cantonment, dated 27th April; also a copy of another complaint made by Dr. Thompson regarding the New Cantonment, dated 10th May; also copy of a letter from Dr. Thompson, dated 8th May, regarding a grove of trees existing in front of the Barrack's right front, and the ventilation of the washhouses.

Q. 80.—Will you tell the Committee what was done to obviate the defects complained of?

A.—With regard to Dr. Thompson's complaint of the 27th April, the Collector had been previously (26th April) requested to remove the village complained of, and to prevent the ground being cultivated. On receipt of Dr. Thompson's complaint, his letter was forwarded to the Collector by order of the Major-General, with a request that immediate steps might be taken to carry out the suggestions of Dr. Thompson as far as practicable. Dr. Thompson wrote again on the 22nd May, stating the strip of land complained of remained in the same filthy state reported by him on

the 27th April. He added, rain would soon fall, and the removal of the filth would be impossible ; that the subsequent heat, acting on this filth-strewn land, would poison the atmosphere in every direction. This complaint was forwarded to the Collector on the 24th May, and he was requested to take steps as soon as possible to have the ground swept, and to prevent the Natives from committing nuisances upon it. The Collector replied (3rd June), that the cultivation would be stopped, and that arrangements would be made for levelling the heap complained of; but that Collector had no funds at his disposal to fence in the land complained of. I have frequently ridden over the ground myself, and I cannot say it was in such a filthy state as described by Dr. Thompson. In one corner of it there was a mound of earth, near the Presbyterian Church, which appeared to me to have been used as a latrine.

Q. 81.—Are you aware if any steps were taken, subsequent to the first complaint by Dr. Thompson regarding the general state of the ground between the Civil Lines and the New Cantonments, to improve its sanitary condition?

A.—I believe the village was moved on the first complaint. I am not aware that anything was done to the ground complained of. I consider the letter referred to the state of the ground—not to the removal of the village.

Q. 82.—Upon what date did you visit the ground subsequently to Dr. Thompson's first complaint, when you found it, as you state, in a less filthy condition than described by that officer?

A.—I was over the ground with the General almost daily. I wish to state what was done in regard to Dr. Thompson's complaint of the 2nd May, stating the imperfect manner in which the surface filth was cleared off. An extract from Dr. Thompson's letter was forwarded to the Cantonment Magistrate on the 11th May. He was requested to report on the subject to the Major-General as soon as possible. On the 13th May, Cantonment Magistrate reported that the land referred to in Dr. Thompson's letter had been inspected, and *again* cleaned. The Police and Conservancy Sergeant had been again warned to exercise a constant supervision over the ground complained of. With reference to the third complaint about a tope of trees in the vicinity of the New Barracks, the General stated he objected to cut them down. The Standing Barrack Committee were assembled to select trees which might be cut down with a view of thinning the tope. That has been carried out with regard to the washhouses. The Major-General stated that he did not see any necessity for the ventilation being improved. With regard to the Old Cantonments, on the 4th May, 1867, Dr. Thompson reported that he considered the present Cantonments of Allahabad as unhealthy as any in India (I give a copy of this letter), and recommended that the troops should be moved to the New Barracks at the earliest possible date. The left wing at this time had occupied the New Barracks, and the headquarters were removed there from the Chatham Lines on the 7th.

Q. 83.—Have any complaints been made to you about the state of the country round the Cantonments?

A.—With the exception of the strip of land referred to, none.

Q. 84.—Do you consider the present conservancy arrangements satisfactory?

A.—With regard to the Old Cantonments, yes; with regard to the New Cantonments, I should say they are as satisfactory as can be till the Barracks are completed. As long as so many workpeople are employed on them, it is impossible that the sanitary state of the place can be as satisfactory as it will be when they have been discharged.

Q. 85.—Do you know anything about the arrangements in the City?

A.—I have never been through it—I have only been on the outskirts.

Q. 86.—What is your opinion of the drainage, tanks, and water supply of Cantonments?

A.—The drainage of the Old Military Cantonments I consider good. The drainage of the New Military Cantonments has not been yet thoroughly completed; but, after a heavy fall of rain, it was found the water ran off the surface of the ground about the Barracks much better than was expected before the rain fell. I think the tanks objectionable, but not more so than those in other places. The drinking-water I believe to be good; I have never heard any complaints about it.

Q. 87.—Have the usual annual repairs of the Barracks—thatching, whitewashing, &c.—been fully executed this year?

A.—Yes. The greater part of the Barracks have been whitewashed three or four times on account of the cholera.

Q. 88.—What is your opinion generally of the Barrack accommodation in the Allahabad Cantonments, New and Old?

A.—I consider the Old Barracks afford ample accommodation for the number of men placed in them, and that they are as good as old temporary Barracks can be. The New Barracks afford excellent accommodation. My objection to them is that they are placed too near the Civil Cantonments, so that there is no space in rear for finding good sites for bazaars, fifth-pits, &c., which should be placed to the leeward of barracks.

Q. 89.—How many swimming-baths are there intended to the New Barracks?

A.—There are two at present; there will be two additional for the women. When the 58th were in the Barracks, only one bath was completed, filled with water, and used by men. This is not enough.

Q. 90.—Dr. Thompson has stated that nothing could effectually improve the condition of the Settlement, *i. e.*, the portion of the peninsula east of the line drawn from Nawada direct south to the Jumna, so far as to make it a fit residence for British troops. Do you agree with him?

A.—No, I do not.

Q. 91.—Do you consider Allahabad a healthy station, compared with other stations in the Doab, in regard to European residents?

A.—My opinion of Allahabad is, it cannot possibly be expected to be as healthy as other stations which are not shut in by rivers, as Allahabad is. I should consider the New Cantonments likely to be much healthier than the old, as the air is perceptibly clearer in the vicinity of the New Barracks.

Evidence of CAPTAIN MARRINER, *Brigade-Major, Allahabad.*

Q. 92.—How long have you been at Allahabad as others?

A.—Since the 7th November, 1868, and I was at Allahabad from the 15th April to the 4th July, 1868, as Brigade-Major.

Q. 93.—Have any complaints been made to you regarding the conservancy arrangement of the Cantonments?

A.—Yes; upon two occasions a village at the back of the Artillery Mess has been reported on by the Quartermaster of the week, for being dirty, and for refuse not being removed. This is out of Cantonments. Reports were made by Officer Commanding detachment 58th Regiment occupying the New Barracks, when first occupied towards the end of April of this year, to the effect that the ground was very much defiled by the workpeople in the New Barracks, that the nullahs in the neighbourhood had been much used as latrines by these men, and the stench arising therefrom was unbearable

and unwholesome. On this report, a Committee was held, by order of the Major-General. Colonel Reid, Colonel Hodgson, Dr. Thompson, Dr. Chalmers, Colonel Stubbs, 4th N.I., and Major Hanmer, were the Committee. They said the ground when they examined it was not so dirty as to render the Barracks unwholesome, but that it was necessary to cleanse the ground; and that was done. I will give you a copy of their proceedings.

Q. 94.—Have the rations of the troops been generally good?

A.—No, I should say not; indifferent. On one occasion the cattle here were so inferior in quality that it was deemed advisable to send to Dinapore for a supply. Indirectly and directly, there were many complaints. General Harris often noticed himself that they were inferior.

Q. 95.—Do you consider the conservancy arrangements of Cantonments to be good and effective?

A.—I think they might be much better.

Q. 96.—What do you object to?

A.—There are too many public latrines, and there is frequently an unpleasant odour arising from them, perhaps from their not being properly cleansed—particularly one near the Meat Bazaar. If not in Cantonments, these are so near to Cantonments as to be offensive. I think the latrines in Chathan Lines are too old; that the floor of the buildings is saturated with filth. It would be better if they were removed and destroyed.

Q. 97.—Do you think there are too many liquor shops?

A—Yes; I think there are a great many more opportunities in this Station for getting liquor for the soldiers than exist in other stations. I think this is objectionable.

Q. 98.—What do you think of the general health of officers and other residents in the Cantonments of Allahabad?

A.—I think it is fair, with reference to other stations. This year the officers of the 58th have suffered more than usual from exposure. I do not refer in this answer to the health of the soldiers.

Q. 99.—Dr. Thompson has stated that nothing could effectually improve the condition of the settlement, *i. e.*, the portion of the peninsula east of the line drawn from Nawada direct south to the Jumna, so far as to make it a fit residence for British troops. Do you agree with him?

A.—No, I don't agree with him.

Q. 100.—You were with your regiment, the 58th, at Benares; was the regimental wing there as healthy at Allahabad as Benares?

A.—I can't speak with certainty. My general impression is, there has been very little dfference between the two, bar the cholera.

Evidence of CAPTAIN JACKSON, *Executive Engineer, Allahabad.*

Q. 101.—How long have you been at Allahabad?

A.—Since March, 1867; and before that, I was here, off and on, in 1862 and 1863.

Q. 102.—Will you give the Committee your opinion as to the drainage of the Cantonments and the Fort?

A.—The drainage of the Cantonments is all good: Clydesdale Lines are situated on a ridge, and drained by a large nullah running betweem them and the Kuttra Lines.

The fall is heavy, and the water runs off at once. The Mansfield Lines are also drained by this nullah.

Q. 103.—Where does this nullah end ?

A.—It runs at the back of Lowther Castle, and discharges into the low land below the Commissioner's Kutcherry. It is in a good state within the limits of Cantonments, but beyond Cantonments has no defined channel, and eventually accumulates in the low land under the Ganges Bund, in front of the Fort.

Q. 104.—How is the drainage of the N orth Cantonments ?

A.—The slopes are not quite so good as in the South Cantonments; but the water very rapidly flows off by the ravines to the Ganges.

Q. 105.—Have you observed the condition of the drainage of that portion of land between the Jumna bridge and Kydgunge; and do you consider it defective?

A.—Yes, it is very defective.

Q. 106.—Have any steps been taken to remedy these defects of drainage, more especially with reference to improving the sanitary condition of the site of the Gun Carriage Agency public build ings under construction in the vicinity?

A.—Not that I am aware of.

Q. 107.—Can you give any opinion on the drainage of the City and country round Cantonments?

A.—No, I cannot.

Q. 108.—Are you aware whether there is any general scheme on foot for draining the Settlement?

A.—No, I do not know of any.

Q. 109.—Do you consider Allahabad a healthly station, compared with other stations in the Doab, in regard to European residents?

A.—I don't think it is more unhealthy than other stations.

Q. 110.—Have the usual annual repairs to the Old Barracks been executed?

A.—Yes; to the full extent.

Q. 111.—What is the nature of the repairs to the latrines attached to the Old Barracks?

A.—The same as to other buildings; that is, whitewashing, repairing, and plastering.

Q. 112.—Have the regimental authorities brought the condition of the Barrack latrines to your notice during the past year ?

A.—Yes; I have received several requisitions for repairs, which have been duly executed.

Evidence of W. C. HENNESSY, ESQ., *Executive Engineer, Allahabad.*

Q. 113.—How long have you been at Allahabad ?

A.—Twelve or thirteen months.

Q. 114.—What is your opinion of the drainage of the New Cantonments ?

A.—It is excellent as far as it has gone, but it is incomplete ; when completed, it promises to be successful.

Q. 115.—Is this system of drainage confined to the limit of the New Cantonments, or does it embrace the rest of the Settlement ?

A.—It is principally confined to the New Cantonments.

Q. 116.—Did any arrangements exist for the conservancy of the ground on which the Barracks and High Court buildings are situated during your incumbency?

A.—In connection with the Public Offices always; and was in existence prior to my taking charge.

Q. 117.—What were these arrangements?

A.—Latrines maintained by the Department. But up to 1st February no conservancy establishment was maintained for the people employed on the Barracks by Government; but a kind of establishment was kept up by the contractor.

Q. 118.—What was the system of conservancy; was it sufficient for the purpose; and under whose supervision was it placed?

A.—For the Public Offices there were two latrines kept up by the Department, and tin filth-carts were employed for the daily removal of the nightsoil; also, an establishment of sweepers to clear the latrines. There were no means of enforcing the use of them. But they were sufficient for the propose; and, as a rule, I think the people made use of them, as it was more convenient for them to make use of the latrines than the more distant nullahs. The supervision was that of myself and my subordinates.

Q. 119.—State, as nearly as you can, the number of workpeople employed.

A.—On the Public Offices about 700 or 800; it may be 1,000. On the Barracks about 4,000 were employed. These 4,000 persons retired to any place they pleased to performed the offices of nature. I don't think there were any arrangements made by the contractors.

Q. 120.—What is your opinion of the site of the New Cantonments in a sanitary point of view?

A.—I think it is admirable on the whole. The site is capable of being very easily drained; the soil is fresh as a rule; the area is free of swamps; and, in an engineering point of view, it is well adapted for building purposes. The water, as a rule, is touched at 50 feet, and the springs at from 70 to 100 feet from the surface.

Q. 121.—Do you know whether these 4,000 labourers employed suffered from unusual sickness whilst employed on these Barracks?

A.—Not that I know of.

Q. 122.—Did cholera appear among these labourers before the troops came into the New Barracks?

A.—I am almost positive it did not; certainly not to any visible extent. I never saw any cases myself, and I am out on the land every morning.

Q. 123.—Were any medical arrangements made for the treatment of the workmen?

A.—None.

Q. 124.—Would the occurrence of a case of cholera have been brought to your notice prior to the troops having come into Barracks?

A.—Not unless they were numerous.

Evidence of R. CARR, ESQ., *Allahabad.*

Q. 125.—Would you tell the Committee how long you have lived in Allahabad?

A.—Fourteen years last January.

Q. 126.—Do you consider the conservancy of Cannington to be good?

A.—There could be an improvement no doubt, but it is much better now than it was formerly.

Q. 127.—How do you think it could be improved?

A.—I think we require more public latrines. At present there are only private ones, and a great number of people have no place to go to, unless they make use of the roads and lanes; and anywhere they can find shelter.

Q. 128.—Are the arrangements for receiving the nightsoil from the houses and private latrines sufficient?

A.—Yes, I think they are pretty good; but I don't think they are always properly attended to. I think there are many houses in the Station where the carts do not go; and I have seen some myself where I should say the carts had not been for a week or fortnight together. This I think is owing to the tenant or occupier not paying attention to the rules. They are liable to a fine, if found out, for not paying attention.

Q. 129.—During your long residence, have you noticed improvement or deterioration in the health of the English residents at Allahabad?

A.—I think the health of the English population has wonderfully improved this last five years. I have known cholera much worse in former years than now.

Q. 130.—Do you consider this year an exceptionally bad year.

A.—I think generally this has been a bad year; but I have seen cholera very much worse both among Europeans and Natives than it has been this year.

Q. 131.—Do you consider Allahabad to be a healthy place?

A.—Yes. I have lived here fourteen years. I have only been ill once, which was occasioned by exposure; and none of my family have been seriously ill.

Q. 132.—Did you hear of cholera being prevalent among the workpeople before the soldiers were moved into the New Barracks?

A.—No, I did not. I heard the place was in a filthy state.

Q. 133.—What is the state of the drainage of Cannington?

A.—It is very inefficient. I have seen six inches of water in the Chapel compound, and a foot in one of my own in the Elgin Road, after one day's rain. That was last year, when there was very heavy rain. But I have seen it before. I have always understood the arrangements were temporary, and that a permanent system would be carried out. There would be no difficulty in carrying out a good system of drainage.

Q. 134.—Do you think the tanks beyond the South Road, by the railway, are injurious to the health of the residents?

A.—Yes, I think they are.

Q. 135.—What do you think of the City drainage?

A.—I know very little of this. It is mainly under Mr. Robertson. I have heard complaints of it.

Q. 136.—Do you know anything of the drainage of the Railway site?

A.—I know there is a long culvert, about 800 feet in length, built by me some years ago. It goes down to the south; but is not sufficient, as with continuous rain it used to get filled up. It went down towards the City.

Q. 137.—Do you consider the proximity of the Railway population affects in any way the health of Cannington residents?

A.—No, I do not think so.

Q. 138.—What do you know of the drainage towards Kydgunge?

A.—That is very defective. I have seen the whole of the land about there under water, and the road by the Cemetery a foot under water; also the whole of the plain

towards the Fort. I may mention that, in regard to the health of the troops, I wish to state that when the troops first went down to the New Barracks, I heard of a large number of soldiers having been seen assembled round two Natives, who were dispensing Native grog out of a mussuk to the men. This was about a mile away from the Barracks, near Soubahdargunge.

Q. 139.—Do you think the Allahabad City conservancy is efficient?

A.—I don't know much about it. I have heard complaints of the state of the City.

Q. 140.—How do you think the sanitary state of the place could be improved?

A.—I think the Cannington drainage might be improved; that public latrines there should be constructed; and more attention paid to private latrines. These generally are open ones, and I think they should be closed.

Q. 141.—Have you noticed any unpleasantness arising from the places where impurities were buried?

A.—No; but I have felt great inconvenience from the workpeople employed on the public buildings making use of the small crops standing near my house for purposes of nature.

Further evidence of JAMES IRVING, ESQ., M.D., *Civil Surgeon, Allahabad.*

Q. 142.—You state that the health of the troops is not so good as that of the Railway *employés* Do you think this may be attributed to the situation of the Old Barracks?

A.—I can't say.

Q. 143.—Do you think the situation of the Old Clydesdale and Mansfield Barracks good?

A.—I have never examined them particularly. I can give no opinion.

Q. 144.—Have you statistics of the sickness and mortality among the European residents of Allahabad, and of the East Indian Railway *employés?*

A.—Not accurately.

Q. 145.—Do you think cholera is present at Allahabad every year during the months of the hot season and rains?

A.—It is, more or less.

Q. 146.—Cholera, you state, prevails more or less in Allahabad during the hot weather and rains. Can you say in what part of Allahabad it first appears; if it does not exist in it all the year round?

A.—No; I can't.

Q. 147.—From your knowledge of the place, should you say the Old Barracks are badly situated?

A.—I objected to the site for the Clydesdale, and less to the Mansfield Lines, when it was originally taken up; having then (1857) been on the Committee to select the site. I objected, because cholera was always more prevalent in the Native regiment cantoned in that situation (Clydesdale) than in the other regiment cantoned in the Chatham Lines.

Q. 148.—Can you state approximately the rate per 1,000 in the European residents and Railway *employés.*

A.—No; I could for the last twelve months, and will let the Committee know.

Q. 149.—Do you consider that the proximity of the Jumna and Ganges rivers, which latter has its banks very ill-defined and low, and subject to annual inundation, affects in any way the health of Allahabad and its vicinity?

A.—I cannot say.

Q. 150.—Have you noticed that cholera epidemics among the European population generally originate in the Clydesdale Lines, or their vicinity?

A.—I cannot say.

Evidence of SHEIKH FURREED-OOD-DEEN, *Pleader, Allahabad.*

Q. 151.—How long have you lived here?

A.—Since the 1st May, 1869.

Q. 152.—Do you consider the City is clean?

A.—1*st*,—With reference to the removal of nightsoil, I think the arrangements are good, and the nightsoil is removed. A cart is established near every mohulla, and all the bhungees, and that class of people, remove the filth to the place where the cart is kept. The cart is enclosed, and the filth is carried away; where I don't know. 2*nd*,—With reference to sweepings, another open cart is retained, which carries off the filth from the houses, streets, and lanes. The filth is brought to the cart by bhungees, who are not paid by the Municipality. 3*rd*,—There is no arrangement for draining the surface-water, and on this account the state of the City is bad, compared with others.

Q. 153.—Is any arrangement made for carrying off the water spilt near the wells by persons washing, drawing water, &c.?

A.—No.

Q. 154.—Are there any arrangements for cleaning the wells?

A.—No; not the Mahomedan wells, unless something objectionable to the religious tenets of the Mahomedans falls in. The well would then be cleaned, but unless this happened, it might not be cleaned for ten years or for any time. I consider the drinking-water from the wells is good compared with other cities. When the wells begin to dry up, and earth falls in, they are cleaned. This is ordinarily in the hot weather. Earth falls in when the water-level falls. I consider the greater part of the wells in such a condition are cleaned out.

Q. 155.—Do you consider Allahabad is an unhealthy town compared with other cities?

A.—I do not consider this is an unhealthy place compared with others.

Q. 156.—Do you consider that the Native population experience inconvenience in regard to health from the condition of the houses in the City?

A.—No. They are not comfortable houses. There is a great want of good ones; but I don't think there has been any illness produced by this.

Q. 157.—Do you think there is more cholera in Allahabad than in other places?

A.—No; I don't think so.

Q. 158.—Do you consider the drainage of the City can be improved without difficulty?

A.—Yes, if we have funds. The City is in a very bad state for want of drainage; in regard to cleanliness, not in regard to health.

Evidence of MR. H. G. CRIBBLE, *Allahabad.*

Q. 159.—How long have you been here?

A.—I have been here four years and more.

Q. 160.—During your residence, have you noticed improvement or deterioration in the health of the English population resident at Allahabad?

A.—I have seen no deterioration. I think there has been an improvement on the whole, excepting this present year, during the hot season.

Q. 161.—Do you consider this year has been an exceptionally bad year?

A.—Yes, remarkably so. I speak from my personal experience.

Q. 162.—Do you consider Allahabad to be a healthy place?

A.—Yes, I do.

Q. 163.—What is the state of the drainage of Cannington?

A.—I consider it to be very defective. The water is not carried off; it stands for some time in places where it collects, and takes a long time clearing off. In my own compound, which is sandy, it takes from twelve to thirteen hours.

Q. 164.—Do you think the tanks beyond the South Road, by the railway, are injurious to the health of the residents?

A.—No, I do not. There is a drain running along by the Railway workshops which is very bad; and a very offensive smell is noticeable there.

Q. 165.—Do you know anything of the drainage of the Railway site?

A.—No, very little.

Q. 166.—Do you consider the proximity of the Railway population affects in any way the health of Cannington residents?

A.—Oh dear, no.

Q. 167.—Do you consider the conservancy of Cannington to be good?

A.—I don't think it is worse than other places, but it might be much improved by drainage. I think a great deal of the filth accumulates in the drains, and there is a difficulty at present in getting rid of it. There is no doubt that the Natives are in the habit of using the drains as latrines. I know of no measures being taken to prevent this, except the vigilance of the Police, and we don't see much of them. But I know of one of my own servants having been detected by the Police in the act of resorting to the drains.

Q. 168.—Are the arrangements for removing the nightsoil from the houses to private latrines sufficient?

A.—I have no reason to say that they are not. I have never noticed any defect on this head, nor in my own compound. There has been a great improvement since the filth has been removed in carts—for the last eighteen months I should say.

Q. 169.—How is drinking-water supplied in your vicinity? Is it generally good?

A.—It is supplied from wells generally. I have two wells in my own compound. I could not drink the water from them, as I consider it bad. I have drank it, but have experienced looseness from it. The water is brackish, and leaves a red deposit of oxide of iron. There are only two good wells in the neighbourhood; the water from them is sweet. From my own wells, it is nasty, dull, and sometimes has a bad fishy smell. I believe in the houses about my house the wells are bad. There are two wells within an area of one hundred yards, and I don't think anyone of us drinks the water from them. The water is about seventy-five feet from the surface.

Q. 170.—Do you know of cases of illness having been more frequent this year than in others?

A.—Only from cholera. I am not aware of other diseases having been more prevalent. As for the cholera, I have known it much worse in Agra, in 1855 and 1856, than it was this year here. The mortality has been greater this year, but I do not attri-

bute that mortality to the state of Allahabad having been worse this year than others, but to the epidemic. I have known that heat-apoplexy this year has occurred in many cases, and has superinduced other sickness. I prefer Allahabad to other places on the plains that I know.

Evidence of MR. FLEMING, *Contractor, Allahabad.*

Q. 171.—How long have you lived in Allahabad?

A.—Over 10 years. I arrived here in July, 1859.

Q. 172.—Do you consider the conservancy of Allahabad to be good?

A.—Well, I don't think it bad during the last two years. It has greatly improved during that time.

Q. 173.—Do you think it could be further improved?

A.—Yes; I have no doubt of that. As far as my immediate neighbourhood is concerned, I have never noticed anything being neglected. There might, perhaps, be more supervision. Sometimes there have been instances of Natives committing nuisances which have been objectionable. I think the Natives in the cases I speak of have preferred to use the secluded places they resort to rather than the latrine which was close by them. I don't know of any public latrine being in existence.

Q. 174.—Are the arrangements for removing the nightsoil from the houses and private latrines sufficient?

A.—Yes; for the last two years they have been good. Before that there was no arrangement that I know of. The carts now come round in the morning or the night, and the arrangement is sufficient; and a cart also comes round for stable refuse.

Q. 175.—During your residence have you noticed improvement or deterioration in the health of the English population resident at Allahabad?

A.—I would be inclined to think that the state of health at present is no worse than it was. I don't think it is better. If there are more deaths, the average to the population is probably the same, as the population has largely increased.

Q. 176.—Do you consider this year an exceptionally bad year?

A.—Yes, I think the year has been worse than usual, particularly with reference to heat-apoplexy and small-pox. We had among our own workpeople as many as twenty cases of heat-apoplexy a-day. This lasted about four days. Men used to come down the scaffolding get a drink of water, and fall down. There was quite a panic among the coolies. Those employed by other contractors were as bad. As for cholera, I think other years have been just as bad; and, taking into consideration the increase of the population, that there are no more deaths now than before. I think cholera is always more or less prevalent in the rains. From April to June, I think it is rare to hear of a case. I have never heard of a case in the cold weather.

Q. 177.—Do you think Allahabad to be a healthy place?

A.—I do; I speak personally. I was ten or eleven years in the Punjab, at Mean Meer and Loodiana, and I never had such good health as I have here. I was in the Sappers.

Q. 178.—What is the state of the drainage of Cannington?

A.—It wants improvement; and a very small outlay would do what is wanted. In many instances, the existing drains have been allowed to silt up. I believe the drainage has not been completed.

Q. 179.—Do you think the tanks beyond the South Road, by the railway, are injurious to the health of the residents?

A.—There are many people living in their neighbourhood. A number of people have built houses there. I should say the tanks might be unhealthy. They are very deep,

filled from surface-drainage, stagnant, and defiled in many ways by dhobees, and syces washing horses.

Q. 180.—Do you know anything of the drainage of the Railway site?

A.—I do not.

Q. 181.—Do you consider the proximity of the Railway population affects in any way the health of residents in Cannington?

A—I think not.

Q. 182.—In what direction do you think the drainage of Cannington should be carried to improve it?

A.—Through the natural drainage of the place, which existed before we commenced building the public offices and Barracks. It ran through a nullah in site 75½, through 75, and across in a north-west direction through the site of the public offices, and emptied itself into the Ganges. This line has been blocked up. I think a line in this direction should be taken now towards the Ganges.

Q. 183.—Have you experienced any nuisance from the workpeople employed on the public buildings using the ground about there for the purposes of nature?

A.—No. There is a large latrine to the west of the block in which the Accountant's Office is to be. This was used by the workpeople, and two carts were provided by the Department for the removal of the filth.

Q. 184.—Were any conservancy arrangements made for the workpeople employed on the Barracks?

A.—Yes. We had a latrine between the New Barracks for the Infantry, and the New Barracks for the Artillery.

Q. 185.—How many workpeople were employed on the Barracks?

A.—I should say I had an average of 2,000 including all, and Mr. Frizzonie not less, and Mr. McCarthy half as many, and about 500 employed by Government.

Q. 186.—How many were employed on the public buildings, High Court?

A.—From 1,500 to 2,000.

Q. 187.—Did you hear of any cases of cholera amongst the workpeople employed in the public buildings and Barracks before the soldiers moved into the New Barracks?

A.—I never heard of any.

Q. 188.—Has there been epidemic cholera amongst the workpeople since the Barracks were commenced?

A.—We have had cases, when cholera has been present in the City and the neighbourhood, more or less every year.

Q. 189.—State what you know regarding the quality of drinking-water at Allahabad, and the depth at which it is procurable.

A.—I think the water is not bad in and about Cannington and the Barracks. At the Barracks, we strike water at from 55 to 65 feet, and Cannington much the same; in some places deeper, in others less so. Of the wells sunk near the Barracks, there is only one which contains a good supply of water, and that has not less than 17 feet in the hottest weather; but the other wells have not more than five and seven feet of water, and a pair of bullocks would empty them in a couple of hours. In a well that I am sinking at the Commissariat Godown, near the railway, water was marked at a depth of 90 feet; and now that we have sunk 110 feet, there are only five feet of water in it. The well near the Rest-house has been sunk by boring to a depth of 150 feet, and this contains an ample supply of water. I have never noticed any peculiarity about the water in Allahabad, either in Cannington, the new Cantonments, or elsewhere.

Memorandum by BHYRUB CHUNDER DASS, *Allahabad.*

" 1.—The want of drainage in the interior of the City is a great source of evil, and it is severely felt by all classes of men. The refuse water of latrines and private sewers runs out to the streets day and night, and makes it impossible to pass through them. The most obnoxious malarious stench arising therefrom is the principle source of engendering all kinds of diseases, such as cholera, diarrhœa, fever, &c., and productive of most serious consequences to the passers by, and also to those who live immediately on the roadside.

" 2.—Not only the above, there are also latrines of private houses immediately on the roadside, without even screens or doors, and the nightsoil of which can be distinctly seen by the passers by from the roads. Sometimes the nightsoil, mixed with water, runs into the streets.

" 3.—Dirty and poisonous water also runs into the streets from pipes of two-storied kutcha and pucca houses on the roadside, in all quarters, to the great annoyance of the passers by, it being full of malarious substance.

" 4.—About two months ago, the system was to accumulate such filthy water in small aqueducts or vats made by respective owners of houses under the *chabootras* on the roadside, and the mehtirs used to sprinkle such water on the roads, which was a very obnoxious practice; but under a new order from the authorities, those aqueducts or vats are filled up and cleared, and thus the water is allowed to run into the streets, which is worse than the former practice. But had there been proper drainage, this new system would have proved beneficial.

" 5.—Conveyance of nightsoil and filth should be made through such roads as are least frequented, and to such quarters as are uninhabited, and at a fixed time in the night, as the practice is in Calcutta.

" 6.—*Burning bricks with nightsoil and filth.*—There are some Native brick-kilns just in the vicinity of the City, and in the immediate neighbourhood of Raneemundee and Uthersooah Police Station, where nightsoil and filth are accumulated for the purpose of burning bricks, which is a great nuisance. The obnoxious stench arising therefrom makes the atmosphere quite unhealthy, and it becomes difficult for the inhabitants of the surrounding localities to live in their dwellings, and even to take their food. When the kilns are set fire to, they keep up burning continually for months together, exhaling a nauseus stench, which is quite unbearable, and is the permanent source of all sorts of diseases which are so frequent in the City, especially in Durriabad, Rusoolpore, Uthersooah, and Raneemundee, &c.

" There is a man by name Seetul, Nooneeah, a resident of Toolseepore, who has taken contract to purchase the nightsoil, and is gathering it near his kiln at Rusoolpore. To prevent his doing so, on the 2nd of August, 1869, all the inhabitants of the abovementioned places had submitted an application to the President of the Municipal Committee, but it has not had the desired effect, although he was warned by Mr. Robertson. There is another danger to be apprehended from these kilns, *i. e.*, the breaking out of fire in the neighbourhood when strong wind blows.

" There are two more classes of people in the City who deal in filth—the aheers and the bhojoahs. The former (aheer) accumulates cow and buffalo dung in large heaps, and spreads those now and then in the shape of *ooplah*, to the great annoyance of their neighbours. The dirty and shameful manner in which they keep their yard is enough to cause sickness.

" The latter (bhojoahs) accumulate all the stable refuses and spread them for dryage on the roadside and other places, which also produces a very disagreeable stench.

" These persons are allowed to commit these public nuisances with impunity, without ever being checked by the persons whose business it is to look after them.

" We are told that persons are appointed to look after the cleanliness of these nuisances, but in our quarter, Uthersooah, we never saw any such man on duty.

" *Streets, Lanes, and Byelanes.*—The state of these cannot be described; they are really in a shameful condition. Among them, the most frequented are the following:—

" *First,*—The one branched out from the Trunk Road, just from the east side of the Kotwally, and passed southward through the most respectable quarter of the City called Raneemundee, Uthersooah, &c., to Durriabad, where most of the respectable Mahomedans live. Through this road an immense traffic is also carried on. Hundreds of carts, drawn by four and six bullocks, heavily loaded with bricks, soorkhee, lime, &c., daily pass through this road, as well as the Jumna Ferry Ghât, called the Kunkara Ghât, of passengers and goods. It is really a pitiable sight to see cart-bullocks, carriage and ekka horses, daily receiving serious damage whilst passing through this road, not to speak of the vehicles themselves. While they are once out on this road they hardly reach their destination without some injury or other. Sometimes the passage through this road is obstructed by breaking of heavily-loaded carts, and the sinking of wheels in the mire, and the public is put to great inconvenience, particularly those who go to office in gharries or ekkas. They have to wait for nearly an entire hour before the passage could be cleared. In my own case I had to wait many days, and on two occasions to leave my gharry behind me and go to office in a hired conveyance, hired from the Chowk, &c.

" *Second,*—The one branched out from the above just at the south end of Lala Munohur Doss's house, and passed westward to the old Moonsiff's Court, and other places, to Buxee Bazaar.

" *Third,*—The one branched out from the Trunk Road just at the front of the Kotwally to Shahagunge, &c., &c.

" There is a rumour that the Kotwal is making arrangement to do the conservancy of the city by contractors. If it is carried out, the suffering of the people will have no bound. There will be no proper check on the contractors, as they will invariably be the Kotwal's own creatures."

Evidence of BHYRUB CHUNDER DASS, *Allahabad.*

Q. 190.—At what part of the City do you reside?

A.—Uthersooah, situated to the south of the Chowk.

Q. 191.—How long have you lived at Allahabad?

A.—Ten years.

Q. 192.—With reference to your written statement, are you personally cognizant of the facts mentioned therein?

A.—Yes; I can prove all that I have stated.

Q. 193.—Have any complaints been made to the Municipal Committee concerning the want of cleanliness, drainage, and disrepair of the road, as stated by you?

A.—Yes. On 2nd August, 1869, we submitted a petition signed by more than sixty respectable residents of the City, applying for the removal of nuisances, such as the accumulation of filth by Seetul, Nooneeah, contractor for burning bricks; the filth-carts traversing the City at irregular intervals, instead of at appointed hours; the sprinkling of sewage from cesspools in the roads; and the burning of filth in the brick-kilns adjoining the City.

Q. 194.—Was any attention paid to this petition?

A.—Yes. Mr. Robertson issued prohibitory orders; but these were unheeded for some time. The accumulated filth has since been covered over. The filth-carts now travel outside the City, and the sprinkling of the sewage from the cesspools has been discontinued, the cesspools being filled up.

Q. 195.—What kind of drinking-water have you in the City?

A.—Well-water of good quality.

Evidence of LALLA GYA PERSHAD, *Banker, Allahabad.*

Q. 196.—How long have you lived here?

A.—I have lived here from childhood; my family for three generations. I live in Daragunge, and am a Municipal Commissioner. I consider the conservancy arrangements of the City and Daragunge to be much better than they used to be. There are several objectionable points; all the lanes are kutcha, and the houses too, as a rule. This renders it difficult to keep them clean, as whenever the rains fall they get dirty again. If they were pucca, it would be easier to keep them clean. There is no arrangement at present for cleaning them; but with funds it could be done. We have not the funds for it. There are arrangements for taking away the nightsoil. These have been introduced in the last eighteen months. Carts are kept up to take away the nightsoil. This is brought to the carts, as it is impossible for them to get through the lanes, which are too narrow for such a purpose. The bhungees who see to this are entertained by the Municipality. The arrangement in my opinion is sufficient. The carts might be increased in number. At present, if one breaks down, one cart has to do the work of two; and they can't do this at present. There is delay sometimes in taking away the nightsoil, owing to the paucity of carts. I don't know of any nooneeahs (lime-burners) and brickmakers, residing in the City or in Daragunge. I know of no brick-kilns close by the City; but there are, I believe, some between the Khoosroo Bagh and the City—about a quarter of a coss from the latter, and half a coss from the former. I don't experience any bad smells from the kilns near Alopee Bagh. There were men employed in making pottery in Daragunge itself; but they have been obliged to keep their works outside the City by the present Collector. Water does accumulate below the bund on the west side of Daragunge. I don't consider Daragunge is a more unhealthy place than other Native cities that I know. I think the mortuary returns of the City are pretty accurate. The present is not a more unhealthy year than others. 1863 was four times as bad a year as this. The cesspools by each house are cleaned out by bhungees who carry the liquid filth away in ghurras, and empty them away from the City in a place set apart for this purpose. Allahabad is as clean as Cawnpore, I think. We have not so many broad roads as they have, but the lanes in Cawnpore are just as bad as the lanes here. The poor people generally get their drinking-water from wells; the better class from the Ganges. The water in the wells on the higher part of Daragunge is brackish; but in the lower ground, towards the east and west, is good. Generally, the water wasted at the wells is allowed to dry or run off as it can. No arrangement is made for this purpose. We drink Ganges water in preference—1*st*, because we (Hindoos) prefer it for its holy nature; 2*nd*, because it is cleaner than well-water; and 3*rd*, because it is better for our digestion. If water was brought in iron pipes from the Ganges, the Hindoos, as a rule, would not drink it; though they would be glad to get it straight out of the Ganges. The Calcutta people would drink water brought down in this way; but there the river water is affected by the ebb and flow of the tide, and that again affects the tanks. The Jumna water is not so good as the Ganges; it is not good drinking-water; even at Agra no one will drink the Jumna water. It is not good for digestion—the stomach feels heavy after drinking it.

Evidence of NARAYEN SINGH, *Kotwal, Allahabad.*

Q. 197.—What office do you hold?

A.—I am Kotwal of Allahabad, and have been so since 1867.

Q. 198.—What do you think of the conservancy arrangements of Allahabad City?

A.—As far as our means go, I think the conservancy is good. If more funds were placed at our disposal, it could be much improved. Drains are wanting in many places. Until arrangements are made to carry off the surface-water, it is impossible to keep the

City clean—*e. g.*, the cesspools get filled, and then the water which lies there gets filthy, and makes a bad smell. The nightsoil is carried off by carts provided for the purpose; but they are too few, and more are required. They are thirty in number for the City only. They commence work about 4 A.M. till 7 A.M., and again from 4 P.M. They take two journeys in the morning, and one in the evening. They don't go between 7 A.M. and 4 P.M. Two chuprassees are retained to see that the carts work properly, and there are nine jemadars at eight rupees each; and the carts are generally under the supervision of the Police, who could, in case of any accident, see that the matter was put right. There are eighteen latrines. At those at Kotaparcha, Soorujkoond, Shahgunge, and Kydgunge, two or three closed carts are retained to carry off the filth. In the other fourteen latrines, the earth is buried in trenches; and when the trenches so dug are filled, the latrines are moved. The pucca latrines are washed twice a-day by bhiestees retained for the purpose. The kutcha latrines do smell, because when urine falls, though dry earth is sprinkled over these places, there will be a smell in the wet weather. There is always a difficulty in getting dry earth. The filth from the latrines and City is taken out to the Kurbulla village, to a nullah close by, and there buried; and a constable is always on duty there to see that the filth is buried there. The pucca latrines are used by a great many people. No doubt men do slip off to the fields and secluded places instead of the latrines; but they are punished if caught, and the Police have strict orders to see to this. The dry earth used for the latrines is dug up from the neighbourhood, and the places from which it is dug up remain unfilled. The pucca latrines are in the City, the kutcha ones are on the outskirts of the City. The pucca latrines are very good—will take in about fifty men. In the wet weather the kutcha latrines have *jhow ka tokri*, over which persons have to sit when they perform the offices of nature, so as to prevent the earth from being saturated with filth. I did hear of a complaint being made by the people about one Seetul, Nooneeah; but this was not in my time, I was away on leave. Up to the rains, the sweepings and filth used also to be burnt in one of the kilns; but this has been put a stop to lately by the Collector's order. The filth was carried on the carts to the kilns, and burnt then and there.

Evidence of GRAHAM PEDDIE, ESQ., *Deputy Chief Engineer, E. I. Railway, Allahabad.*

Q. 199.—How long have you resided in Allahabad?

A.—I have been three years at Allahabad.

Q. 200.—What is your opinion of the drainage of the Railway site and buildings? Is it complete?

A.—It is not complete. We have spent about Rs. 5,000, and purpose spending about Rs. 18,000 more. It is delayed for want of the submission of plans and the sanction of Government of India. When complete, the system will terminate partly in the Jumna and partly in the Ganges. It would run down towards the cuttings along the main line towards the Jumna bridge. If there was a Government system of drainage, we would connect ours with the Government main drainage in the event of its being—as it must be from the situation of the Railway works—the cheapest plan. It is not contemplated to carry any additional portion of the drainage into the large excavation opposite the goods godown towards the City. A portion of the drainage already runs there. The washing of the boilers runs into it. Unpleasant odour is sometimes experienced from the drain along the workshops. That has been occasioned by its not being cleaned sufficiently often. I should think the Railway Company is responsible for its being cleaned; in fact they have cleaned it, when a complaint was made last hot season by the Telegraph Department. There has been no inconvenience experienced, as far as health is concerned, from this drain by the people who have long lived in its neighbourhood.

Q. 201.—What is the cause of delay in the Railway drainage being commenced upon?

A.—The existing drainage is considered sufficient for the present; we are prepared, however, to extend our drainage as we increase our workpeople's numbers. We also

have waited in order that we might see what the Government plans for the drainage of Cannington, and the Settlement generally, might be. We don't consider there is any present necessity for extending our drainage, as the cuttings alluded to, which are some eighteen feet deep, are quite sufficient to carry off all our drainage.

Q. 202.—Does the drainage to the Ganges run through the New Cantonments?

A.—No; what there is, is a very small portion of the drainage, being only that of an area about 600 feet square.

Q. 203.—What is your opinion of the healthiness of Allahabad?

A.—I think it is more unhealthy than Benares or Ghazeepore, the only two places in India at which I have lived any time. I would not compare Allahabad, however, with Ghazeepore, as the conditions of the two places are very different.

Q. 204.—The Committee would be glad if you would give them information regarding the engine-well.

A.—We are taking out daily 75,000 gallons, in seven hours and a-half. This lowers the water 9 feet 6 inches. The water-level is always at its old mark by the next morning—probably during the night. The lowest depth at which the water has been from the surface was 63 feet; there are 16 feet of water below this in the larger well, and 20 feet more in the smaller well below. There are tap-pipes below the smaller well again, which go 50 feet further. The larger well is 11 feet 6 inches diameter, the smaller 6 feet; and the tap-pipes, two in number, are each 6 inches in diameter.

Evidence of KALEE DASS NUNDEE, *Sub-Assistant Surgeon in Charge of the Colvin Dispensary, Allahabad.*

Q. 205.—How long have you been at Allahabad?

A.—About four years.

Q. 206.—State what you know regarding the health of the Native population at Allahabad.

A.—I consider it rather an unhealthy place, compared with Mirzapore for instance. The applications for relief, considering the population, are very numerous. The diseases chiefly prevalent are diarrhœa, dysentery, and fever. As regards cholera, this has been an exceptionally bad year. I think the prevalence of sickness to be a good deal attributable to defective drainage, adulteration of food, high rates of provisions in consequence of the famine, and defective conservancy.

Q. 207.—In what respects do you consider the conservancy and drainage defective?

A.—It appears to me that the conservancy of the City is defective for want of establishment, and the drainage of the City is incomplete. There is no arrangement for carrying off the water from the byelanes. There is also a large drain in Johnstongunge, which holds stagnant water in the dry season. This has recently been made pucca, but it has only partially remedied the defect.

Q. 208.—Have you heard any complaints regarding the conservancy arrangements of the City?

A.—Yes; I have heard great complaints regarding the cesspools of houses, and the way in which the sweepers throw their contents on to the public thoroughfares. Formerly, there existed a running drain in every road, which carried off the sewage of the houses; but about a year and a-half ago, a Municipal order was issued, directing a cesspool to be made for the sewage of every house. These cesspools were emptied in a very irregular manner; sometimes by the Municipality, sometimes by the householder, and often not emptied at all. Very offensive odours were emitted from them. During the last few days, a Municipal order has been issued ordering the cesspools to be filled up.

Q. 209.—What is your opinion of the drinking-water in the City?

A.—I think the well-water very good, although not quite free from impurities. Some of the wells have brackish water; those in constant use are generally cleaned annually, but many are left wholly uncleaned.

Q. 210.—Do you consider the City overcrowded?

A.—No; but the houses are very indifferent.

Q. 211.—Where do the Hindoos burn their dead?

A.—Formerly they burnt the bodies above Daragunge, but now, by a Municipal order, they are obliged to burn them across the river.

Q. 212.—Where do the Mahomedans bury their dead?

A.—At Kurbula and Duriabad.

Q. 213.—Do you ever receive in your dispensary pilgrims and travellers (generally from a distance) suffering from communicable diseases, such as small-pox, cholera, &c.?

A.—Yes; every year I receive several patients from among the pilgrims and travellers by rail, chiefly from Benares, Cawnpore, and Jubbulpore. This year, the first case of cholera which came under my observation was a resident of Benares, who was taken ill between Mirzapore and Allahabad, and brought direct to the dispensary by one of the Railway Police. This was on the 19th January. The next admission was on 1st February, a resident of the City; the next on the 2nd February, a resident of Kutchpoorwa. From this date cases were frequent.

Q. 214.—Do you think cholera disease is present at Allahabad at all months of the year?

A.—This year it has been present. In former years I do not think it has been.

Q. 215.—Do you think any parts of the City specially unhealthy?

A.—Yes; Aheerpore (mohulla), Goojratee (mohulla), Badshai Mundee, Mousimgunge, are particularly unhealthy; and in these places the drainage and conservancy are very defective. When epidemic diseases prevail, I receive more cases from these than from any other parts of the City.

Evidence of NIZAM-OOD-DEEN, *Native Doctor, Allahabad.*

Q. 216.—How many years have you resided in Allahabad?

A.—Thirty-nine years.

Q. 217.—During the past few years, do you think sickness has been greater in Allahabad?

A.—I do.

Q. 218.—To what diseases is the increased sickness chiefly owing?

A.—More particularly to fever, dysentery, diarrhœa, small-pox, and cholera.

Q. 219.—To what is this owing?

A.—Compared with former seasons, this has been greatly hotter. Cholera also has been prevalent since the public latrines have been established; and in consequence of their establishment, the sickness has increased. I believe contagious diseases are propagated from these. So far as the climate is concerned, I consider that of Allahabad better than that of other cities to the eastward. I consider that the climate improves as you go westward.

Q. 220.—What are the conservancy arrangements of the City? and do you consider them sufficient?

A.—They are not sufficient. The water from the cesspools is thrown over the roads; but I hear this practice has been stopped. The carts conveying the filth about the streets are a great nuisance, and emit an unpleasant smell.

Q. 221.—What do you propose in place of these public latrines?

A.—I propose that the former means of disposing of nightsoil should be reverted to; that every individual should arrange for the removal of his own. In this way no unpleasant smell would be noticed.

Q. 222.—Do you think the surface-drainage of the City satisfactory?

A.—I do. It runs off quickly.

Q. 223.—Do you consider the proximity of the brick-kilns to Duriabad injurious to the health of the people?

A.—Formerly these brick-kilns were on a limited scale; lately they have greatly increased, and in them all kinds of filth are burnt. The smell from them is a great nuisance to the neighbourhood.

Q. 224.—Is there any butcher's quarter in the City?

A.—No, not in the City; but there is one in the suburbs called Atallah, consisting of about fifty houses. There is a slaughter-house in this suburb, and the meat is thence distributed over the Settlement for sale.

Q. 225.—Do you think the sanitary state of this slaughter-house satisfactory?

A.—I do.

Evidence of SHEIKH RUJUB ALLI, *pensioned Native Doctor, Allahabad.*

Q. 226.—What is your opinion of the state of health in the City this year compared with former years.

A.—I think it much worse this year than usual, perhaps because there has been such an excessively hot season. This has produced much heat-apoplexy. There has been much small-pox and cholera. Cholera began in February and March, and went on till about eight or ten days ago; it has ceased now. I have lived here thirty-two years. I think the place is a healthy place. Since the mutiny, food has been scarce and adulterated, and illness has increased.

Evidence of SOOBEE, *Native Doctor, attached to Kuttra Dispensary, Allahabad.*

Q. 227.—Has there been more sickness this year than usual at Allahabad?

A.—Yes; much more than usual. Cholera has been much more prevalent; but not other diseases. The heat has been very great; that may be the cause of this. Cholera has been prevalent for the last five months. I can't say what may be the state of the health of Allahabad compared with other cities. But there has been very much more sickness here this year than usual, *i. e.*, from cholera and sunstroke, and the heat has been very much greater. I have been here since 1857.

Evidence of SHEIKH KURREEM BUX, *Native Doctor, attached to Kydgunge Branch Dispensary Allahabad.*

Q. 228.—How long have you lived here?

A.—I have lived here for many years; and for two years have been attached to Kydgunge, and for twelve years before was in the garrison.

Q. 229.—Do you consider there has been more sickness this year than usual?

A.—I consider the sickness here this year has been much worse than usual. Small-pox, sunstroke, and cholera have been very prevalent. I think the greater heat has

been the cause of this. The latrines have, perhaps, increased this sickness, and the conservancy is not as good as it might be; but it is much better than it was. I think Allahabad is a more healthy place than the cities to the east, but not more so than those to the west. There have been instances of adulteration of food lately, owing to the scarcity; but in a case which happened lately, the man was caught and punished by the Magistrate. No doubt adulteration of food increases sickness.

Evidence of JAN ALI, *Native Doctor, attached to the Daragunge Dispensary, Allahabad.*

Q. 230.—Do you consider there has been more sickness this year than usual?

A.—I consider there has been more sickness this year than in other years. Cholera has been more prevalent; diarrhœa also, and dysentery, and sunstroke. Small-pox was not more prevalent, but cholera and sunstroke were much more so. I have been here for twelve years, and never saw such a year as this for cholera and sunstroke. In Daragunge it was worse than in the City. The cause I believe to be the very great heat. I think Daragunge is worse than other parts, owing to the bad drainage, which takes all the water down towards Daragunge; and also that most of the Hindoo travellers who stop in Allahabad stop at Daragunge. Cholera began with us on the 6th March—a traveller from Muttra, whom I was called to see at his house. There were five cases then; and it stopped after this for a month or two. The man had diarrhœa when he left Muttra. I think the Allahabad climate a very fair one. I don't think it is so good as it was. It seems to me that the population has increased without any corresponding increase to the accommodation for them.

Evidence of SHEO PERSHAD, *Native Doctor, in private practice, Allahabad.*

Q. 231.—Do you consider there has been more sickness this year than usual?

A.—I think there has been more illness this year than usual. Cholera has been more prevalent than usual; I attribute it to the excessive heat. Heat-apoplexy has not been so bad as usual. The Allahabad climate is good, I think; but I have no doubt the late scarcity, inducing people to eat worse food than usual, has added to the sickness of this year.

Evidence of REV. F. FAGAN, *Garrison Chaplain, Allahabad.*

Q. 232.—How long have you been here?

A.—Since April 9th, 1868.

Q. 233.—Do you consider, from your experience, that there has been greater mortality this year than last?

A.—Yes, a considerable difference; more deaths in one month than I had the whole of last year. These have been mostly from cholera, but there have been cases of sunstroke. Out of 54 deaths during August, 1869, 32 were from cholera. These deaths occurred among the 58th and Artillery. There were also two deaths which occurred in regard to men of the 107th Regiment who happened to have been left here as time-expired men.

Q. 234.—Do you think there has been much mortality among the Civil residents?

A.—I have not had an opportunity of forming an opinion on this subject. The Civil residents have been under the charge of Mr. Linton lately.

Q. 235.—Is there anything you would wish to state in regard to the cholera among the soldiers?

A.—Only one thing has struck me, and that is the repugnance of the soldiers to come into hospital and report themselves. Humanly speaking, I think some lives might have been saved had men come into hospital when just taken ill. One man mentioned to me he had been ill for twenty-four hours, and said he had thrown away his life.

Evidence of DR. GRANT, *in Medical Charge of* 11*th Bengal Lancers, Allahabad.*

Q. 236.—Your regiment is stationed at Papamow?

A.—Yes.

Q. 237.—What do you think of the drainage about Papamow?

A.—I can speak with regard to the drainage about our own Lines; that is good—naturally so. In the Serai in which the troops are, there are pucca drains. I think, too, between our Lines and the Artillery Lines the drainage is good; but the water seems to lie between the Artillery Lines and Captain Griffin's house. I don't know anything about the ground between the Convent and the Commissariat Lines.

Q. 238.—Have your men been generally healthy at Papamow?

A.—Yes, very healthy.

Q. 239.—What do you think of the conservancy about Papamow, *i. e.*, about your Lines and the neighbouring ground?

A.—Of our own Lines the conservancy is good, the arrangements being regimental. About the villages, it is much the same as I have noticed all over India. The villagers pollute the ground in the neighbourhood of their village and the nullahs adjoining.

Q. 240.—Do you notice any unpleasant effluvia about the villages?

A.—Yes, sometimes very unpleasant; but not worse than in other places. It is the usual Native village smell.

Q. 241.—How does the river Ganges, nearly surrounding the Station as it does, affect the health of the residents, in your opinion?

A.—I can only speak of our own men and officers, and that for a very short space of time. From April to August, I should say there were no ill effects. We were only cantoned at Papamow from April. But I should expect that in the months of September and October, sickness might arise from the river falling, and the banks and low lands drying. This would probably cause fever. As the banks about us are kunkur, I don't anticipate any extra sickness in the case of the regiment.

Q. 242.—Do you think the drinking-water is good at your end of the Station?

A.—Yes, I should say so, as our men are healthy; but I have not examined it, nor has it been analysed. There is one pucca well for drinking-water in the Serai, only used by our own men, and that is clean.

Q. 243.—What is your opinion of the site of the present Artillery Barracks as a place of residence for European troops?

A.—The site is good.

Q. 244.—Do you think it is as good for the purpose as the site of the New Cantonments?

A.—I think the site is infinitely better; 1*st*, because it is less crowded, is more open, is farther away from the City, and I should think better drained naturally; but on this point I don't speak confidently. Another great reason is that the old Artillery site has not been polluted as the site of the New Cantonments, or the ground immediately about it, has been by the myriads of Natives. When our regiment was stationed in that direction, within a quarter of a mile to the left of the New Barracks, the whole of the ground between the plain and nullahs was badly polluted, more especially two or three small villages which intervened between us and the New Barracks. These I believe were hamlets where some of the workpeople employed in the New Barracks lived. I remember four or five hamlets. The ground, also, between us and the railway, especially between the Cawnpore Road and the railway, was used as a latrine by the surrounding villagers and a large number of bricklayers.

Q. 245.—Have you ever noticed that the Barracks themselves were polluted by the workpeople?

A.—Yes; during the time they were being built. In the unfinished Barracks I have seen two or three deposits of human excrement. I should say these were exceptional cases.

Evidence of DR. WILSON, *4th Native Infantry, Allahabad.*

Q. 246.—Are you in medical charge of the 4th Native Infantry?

A.—Yes.

Q. 247.—How long have you been here?

A.—Since 18th December, 1867.

Q. 248.—What is your opinion of the drainage of Allahabad generally?

A.—I know nothing about the drainage of the Old Cantonments or of the City. I don't know much about Cannington; but from driving through it, I should say the drainage was pretty good. Where the Mess-house is, near the North Road, I do not, however, think it is all good—there is no drainage there. As far as our present Lines are concerned, I think the drainage is very good. It has just been completed. I don't know about the site of the New Barracks; but, as far as I can judge, the drainage appears to run off freely.

Q. 249.—What do you consider of the conservancy arrangements of your end of the Station?

A.—New latrines—one for the men and one for the women—have been completed in our Lines. They are not yet used. The men resort to the low lands by the river, and to an island close by. The men don't like to use the latrines: they prefer their old customs. A conservancy cart, supplied by Cantonment authorities, comes daily once a morning to carry away the refuse—not nightsoil. Our Lines are clean and well-kept. No nuisance is experienced from the men resorting to the lands about. A chain of sentries is kept up to prevent them from coming too near the Lines.

Q. 250.—What do you consider to be the state of the site of the New Cantonments—cleanly or otherwise?

A.—I consider they were kept in a very filthy state up to the time the latrines were established. I think this was done about the end of May. It was after the troops first occupied the New Barracks, and I think after they had occupied the barracks a second time. The whole of the ground was in a filthy state. Last March and April we occupied one of the barracks as our Mess, and did so till the Europeans came in, up to about the 5th April. I think that was the date we went out. In walking about there, we experienced a very unpleasant odour. There was no mistaking what was the cause of this. Before we left, nothing was done that I know of to improve the cleanliness of the place. Some time after we left, the latrines were established. I don't know of the ground having been cleaned in any way.

Q. 251.—Have any of the soldiers of your regiment suffered from cholera during this year?

A.—Yes; there were sixteen cases, of which fourteen occurred in our Lines.

Q. 252.—When did the first case occur?

A.—On the 17th April—a sepoy, a married man, who lived in the Bazaar. We had no cases in the cold weather months, *i. e.*, from January, 1869; but we had one in December and one in November, or there might have been two in November altogether. There were three in the cold weather months at the end of 1868 amongst the sepoys; and there were some cases—two or three—in the Bazaar. My regiment is cantoned in the New Lines between Mhow and Serae.

Q. 253.—Do you know of any cases of cholera having occurred in the neighbourhood of the New Barracks before the European soldiers moved into them?

A.—No; not from my own knowledge. I saw mention made in the papers of cases having occurred. I don't know of any cases having occurred among the workpeople.

Q. 254.—What is your opinion of the drinking-water in your Lines?

A.—I can only speak of the wells used by the sepoys and our officers. I think the water is very good. The wells are new, and there is a good supply of water.

Q. 255.—Has your regiment been healthy here?

A.—No, not last year; but we were not under cover then. This year we have been very healthy on the whole. The principal diseases last year were fever and dysentery.

Evidence of the REVD. T. EVANS, *Baptist Minister, Allahabad.*

Q. 256.—How long have you been at Allahabad?

A.—Since December, 1868.

Q. 257.—Where do you reside?

A.—In Elgin Road; and I have lived there since I have been here.

Q. 258.—Do you consider the mortality and sickness among your congregation has been larger this year than in other years?

A.—Yes; I do. My congregation numbers about 250. We have lost this year six by death—most of them by cholera; and I suppose fully twenty have been ailing, including children. In 1868 we had two deaths—no cholera cases; and I am sure not half the number of cases of sickness that have occurred this year. My congregation reside chiefly in Cannington. We have only a few from the old Station.

Q. 259.—Do you consider Cannington, as a rule, to be healthy?

A.—Yes, I do; very healthy. I am sure Cannington is more healthy than Delhi and than Agra, in both of which places I have lived. I think the sickness this year is exceptional, and may be attributed partly to the want of rain last year, and the extreme heat experienced this hot weather.

Q. 260.—Do you consider the conservancy of Cannington to be good?

A.—I don't think it is bad; but of course it is capable of improvement. I think, on the whole, the place may be considered clean. I have never noticed any unpleasant odours from the place. Lately, great improvement has been made in the arrangements for labourers. Each private house, I believe, now has a latrine. I only know of one public latrine, near the Jail. I don't know of any public latrine in Cannington. I should say it would be a good thing to have one or two. There is no deficiency in the arrangements for removing the nightsoil in our house. I can't speak of other houses. The stable refuse is not removed so often as it might be. I think it ought to be removed every other day.

Q. 261.—Did you hear of cholera being prevalent among the workpeople before the soldiers were moved into the New Barracks?

A.—No; I don't remember. I think it was after the troops moved the workpeople began to die. I think it was a very unwise step to move the troops into the New Barracks, where so many workpeople had been employed so long, and were still there. I think also the Barracks roofed with tiles are a great mistake, and that the thatched roofs are far better. I have heard the men who were located in the New Barracks, though there only for a short time, complain much of the great heat, which they said was unbearable, and such as they had never experienced in a thatched bungalow.

Q. 262.—What is the state of the drainage of Cannington?

A.—I think the drains require widening and deepening. Last year, in the very heavy fall of rain that occurred, Elgin Road was six inches under water. The drainage, though good enough for common purposes, is not sufficient to carry off the water in any great storm. If I may be allowed to make a suggestion, I think a stop ought to be put to the practice here of building two houses upon one site, which has obtained in two or three cases I would mention. There is one case immediately behind my bungalow, another opposite Howard Brothers' office, and one case at the west end of Elgin Road. The practice, if followed, would produce overcrowding.

Q. 263.—Do you think the tanks beyond the South Road, by the railway, are injurious to the health of the residents?

A.—Yes; I think they are in their present state. They should be deepened and sloped, and cleaned; at present they don't seem to be attended to. There are other tanks of the same nature in Cannington itself. One near Mr. Carr's house, to the south of Thornhill Road; and one near Beake's shop—behind it.

Q. 264.—Do you know anything of the drainage of the Railway site, particularly about the work-shops?

A.—No, I do not.

Q. 265.—Do you consider the proximity of the Railway population affects in any way the health of Cannington residents?

A.—No; I consider it has not been injurious. The houses built for the Railway people are very good ones. They are likely to be hot; but though some are tiled, what they are building now are flat roofs. I think the Railway authorities should be made responsible for the sanitation of their bungalows.

Q. 266.—As you live near the New Cantonments you may be able to tell the Committee whether you think the land there has been defiled by the workpeople employed?

A—Yes, I think it has been defiled by them; and I have noticed unpleasant odours when I have been passing by there. The position of the New Barracks themselves I think good, but I don't think people should be allowed to build near the Barracks. Some of the houses already being built there are, I consider, too near the Barracks.

Q. 267.—What is your opinion of the drinking-water at Cannington?

A.—I think it is as good as any in India from my experience. I always take the precaution in the rains of having my water filtered through charcoal. I know of no wells where the water is brackish. Delhi and Agra, on the other hand, have very brackish water.

Q. 268.—Do you consider Allahabad to be a healthy place or not?

A.—Yes; on the whole, I think it is a healthy place compared with others in India.

Q. 269.—The Committee understand you visit the City very often in the course of your duties. Do you wish to state anything to the Committee in regard to the state of the City?

A.—Yes; I think there is a custom prevalent in the City which I think is very injurious to health, and should be put a stop to, though it may be difficult to do so. A majority of the upper-storied houses have pipes conveying all the filth from the upper storey into a cesspool below, generally at the back of the house, in one of the gullies. Even if the cesspools are cleaned out, the pipes, being closed, must be foul. But the cesspools generally appear to be full of filth. It is very difficult to walk through the gullies and lanes on this account. Sometimes the odour is most offensive, and must be so especially in the hot weather. These nuisances are noticeable in the most respectable houses. But I think they should be done away with. Then, I fear, the filthy water from the cesspools is thrown over the roads. I think the drainage is very defective in the City, and I don't believe the funds of the Municipality are sufficient to enable them to cope with this. There is no reason why the City should not be well drained, as there is a natural slope on two sides which would carry off the water.

Evidence of Revd. B. Davis, *Church of England Mission, Allahabad.*

Q. 270.—How long have you been at Allahabad?

A.—Since March, 1861. I reside in the Mission Compound, at the corner of the Canning and City Roads.

Q. 271.—Do you consider the mortality and sickness among your congregation have been larger this year than in other years?

A.—Certainly. We have never had cholera in the Native Christian village before; we had five fatal cases in about as many days, the beginning of August. The first case was on the first Sunday in August, the day after the General died; but I am not sure of the date.

Q. 272.—Can you state the number of the population in the Christian village?

A.—Our congregation is over 400, but in the village the numbers are a little below 400—380 I should think. We had other cases of cholera, but not fatal; and the mortality among the children was above the ordinary number. The causes were ordinary ones.

Q. 273.—Do you consider the site of the Christian village to be healthy?

A.—Yes, I should say so. Compared with Kuttra and Colonelgunge, which are not very far off the place, it has been healthy; and when small-pox has prevailed, it has not been so severe as in the adjoining places. The smaller number of cases of small-pox may perhaps be attributed to the greater amount of vaccination among the Christian villagers.

Q. 274.—Do you consider Allahabad to be healthy or unhealthy?

A.—I can't give an opinion on this subject.

Q. 275.—Do you consider the conservancy of Allahabad to be good?

A.—The conservancy of the Christian village is good; and from my own experience in regard to my own house and compound, I should say the conservancy arrangements are good. I visit the City twice a-week, and with the exception of the back lanes and gullies, the place is clean and there are no offensive smells. In the lanes, there are often nasty smells, and the side-drains are not clean; they have often black water lying in them.

Q. 276.—What is your opinion of the drainage of the City?

A.—As far as I can see, it seems good; the water seems to run off. Of course there are some times stoppages here and there. In the side lanes, after rain, the water stands, and does not have so much outlet as it should.

Q. 277.—You say disease has been more prevalent this year than in previous years. Is there any cause you would assign for this?

A.—Seeing that cholera has been generally prevalent this year throughout the country, I should say, whatever the cause may be, it is not special but general.

Evidence of Revd. David Mohun, *Allahabad.*

Q. 278.—Are you in charge of the Native Christian village?

A.—Yes.

Q. 279.—How long have you lived in Allahabad?

A.—About eleven years.

Q. 280.—Do you consider the present year has been more sickly than other years?

A.—Yes. In our village we have had a good deal of small-pox and cholera. We have never had cholera before. We had five fatal cases in August—three on the 15th

and two on the 17th; and altogether there were nine cases. There are about 400 persons in the village. Small-pox has not been worse than usual this year. With the exception of the cholera, the health of the villagers has not been worse than usual; they have been fairly healthy.

Q. 281.—Do you consider Allahabad to be healthy or otherwise?

A.—I have no reason to complain of it; but I don't think it is so healthy as Benares, where I lived for twenty years. I think Benares is far healthier.

Q. 282.—Where do you live?

A.—In the Kuttra Bazaar.

Q. 283.—What is your opinion of the sanitary state of Kuttra?

A.—It is not what it ought to be. Some of the lanes are very dirty. There are two public latrines in the Bazaar, which are not kept at all in a cleanly state. I live near one of them, and whenever there is an east wind, a very unpleasant effluvia is carried from it. I asked a friend of mine regarding it, and he said, "I would rather be sent to prison for eight days than have to stay half-an-hour in that latrine." This remark was made about five years ago.

Q. 284.—Do you consider the establishment of public latrines preferable to the private arrangements formerly in existence for the disposal of nightsoil?

A.—I do not approve of these latrines in the heart of the Bazaar; at all events, as they are at present kept. The filth lies in them for hours without being removed.

Q. 285.—Are you of opinion that the drainage of Kuttra is satisfactory?

A.—Yes, I think it is. There is only one place to which I specially object. It is between the public latrine near the Tehseeldaree and the Kuttra Chapel. I believe it is a natural hollow, and into it a quantity of sewage flows and accumulates. It dries up very soon as a rule; but when it remains for a week or so, it emits unpleasant odours.

Q. 286.—Do you consider the drinking-water in and about Kuttra wholesome?

A.—I can only speak of the well in my own compound. The water from this I, with others, consider very good.

Q. 287.—Have you ever noticed any unpleasantness from the conservancy carts standing in the Chowk?

A.—No.

Q. 288.—Compared with the City of Benares, do you consider that of Allahabad dirty?

A.—I consider Benares City to be greatly more dirty. When I spoke of the healthiness of Benares, I referred to the Station and not to the City, which I consider more unhealthy than the City of Allahabad.

Q. 289.—Have you noticed any improvement in the health of the part of the Native community under your charge during the past few years?

A.—Their health has been generally good.

Q. 290.—Do you think food more adulterated here than it used to be?

A.—The bunneeahs are always inclined to adulterate the articles of food which they sell. Ghee is often adulterated with "kurral," and several kinds of oil are also mixed with it; mutton and beef fats are also used for adulterating it. Atta is often mxied with the flour of inferior grains, such as barley and the millets. The bunneeahs adulterate purely with the object of gain. Adulteration of food is more common during years of scarcity.

Evidence of MR. J. T. S. MORE, *Merchant, Allahabad.*

Q. 291.—How long have you resided here?

A.—Four years. I live opposite the Chatham Barracks.

Q. 292.—Do you consider, from your experience, there has been greater mortality this year than the last?

A.—Yes, greater than in any of the last four years; the main cause being cholera.

Q. 293.—Do you consider Allahabad to be a healthy place or otherwise?

A.—I don't think it is unhealthy; it may not be so healthy as other stations. I think the Old Station is the most healthy part—more so than Cannington: I live in the Old Station, and we have always been healthy; and this is my general impression.

Q. 294.—Do you consider the conservancy arrangements at your end of the Station to be good?

A.—Yes, I think they are pretty good. There is nothing to complain of where I reside; the conservancy carts come regularly to my house.

Q. 295.—Have you any reason to complain of the nullah which runs behind your house?

A.—No; it used to be used as a latrine in hot weather at one time, but has not been since a latrine was constructed near the Artillery Carbine Practice-ground.

Q. 296.—Is there anything to complain of in regard to the drainage?

A.—No, water runs off very easily; but there is a ditch in my compound which might be improved. It is in my compound. I am the proprietor of the house. I think the ditch would be improved by being filled up. I find a difficulty in getting earth. We have not suffered anything from it, but it would be better if it were filled up.

Q. 297.—What do you think of the drinking-water about you?

A.—I have very good water in my compound; it is the best water I have tested. I think the Allahabad water is very good.

Q. 298.—Do you feel any ill-effects from the tank at the other side of the road, opposite the Agra Savings' Bank?

A.—No; but I think it looks sometimes in a filthy condition.

Evidence of REVD. FATHER FRANCIS, *Roman Catholic Chaplain, Allahabad.*

Q. 299.—How long have you resided in Allahabad?

A.—I arrived in the month of March, 1869.

Q. 300.—Have you resided in India any length of time?

A.—Six years.

Q. 301.—What estimate have you formed of Allahabad as a place of residence both for Europeans and Natives?

A.—I have always heard it was a sickly place—cholera occurring here every year. There has been no sickness at my house. None of my three predecessors have been sick. During nine years none of them left from ill-health.

Q. 302.—You live close to the Kuttra; do you ever experience any bad smells therefrom?

A.—No.

Q. 303.—Do you think the conservancy arrangements are good?

A.—Yes; I think the place is generally clean about my own part of the place.

Q. 304.—How many of your congregation have you lost during the time you have been here?

A.—Eight soldiers and civilians.

Evidence of PREEONATH BOSE, *Homœopathic Practitioner, Allahabad.*

Q. 305.—How long have you been in Allahabad?

A.—For the last two years, residing in the City.

Q. 306.—Do you consider there has been greater mortality this year than the last?

A.—Yes, comparatively; cholera has been more prevalent, also diarrhœa among children; small-pox, too, was prevalent this year more than the year before.

Q. 307.—Do you think there is any special cause for the greater mortality this year?

A.—It is on account of the unhealthiness of the Native quarters, bad conservancy arrangements, and bad drainage. The rooms and huts here are not ventilated; the habits of the people, too, are dirty.

Q. 308.—Then do you consider the drainage and the conservancy arrangements to have been worse this year than previous years?

A.—No; they have not been improved in the two years I have been here, except in the big streets. Some of the lanes are impassible from the dirt, cow-dung, and smell of urine.

Q. 309.—Do you consider sickness has been worse in the dirtier part of the City than in the cleaner parts?

A.—Yes; Badshahee Mundee, Aheerpore, Atoorshoea, are the dirtiest quarters, and I have found sickness most prevalent in these quarters.

Q. 310.—Are there many animals—cows, bullocks, horses, donkeys, &c.—kept in the City?

A.—I don't know; I know there are many Aheers.

Q. 311.—Have you had more cases of cholera from these quarters than from others?

A.—Yes; I have attended altogether about 200 cases; more than two-thirds came from these dirty quarters. This is an approximate statement. I don't keep a book of my cases. Badshahee Mundee and Aheerpore are more densely populated than other quarters. I cannot say whether, in proportion to the population, the number of cases was greater from these dirty quarters.

Q. 312.—Have you noticed that the poorer Natives often sleep on the ground in the City roads?

A.—Yes.

Q. 313.—Do you think that custom is liable to produce sickness?

A.—Yes.

Q. 314.—Do you think that the City of Allahabad is as dirty as the Native parts of Calcutta?

A.—Yes, it is worse; and as far as the cleaning is concerned is worse than Benares.

Q. 315.—In what points do you consider the conservancy arrangements to be defective?

A.—I consider that parts of the town ought to be made over to individual members of the Municipality. It is impossible for one Magistrate to supervise the conservancy of Allahabad. I think there is a want of supervision. The Municipal Commissioners should have some authority over the police as far as conservancy is concerned; and as far as conservancy is concerned, they should have power to investigate complaints, and to punish for breaches of the law. At present, nightsoil is removed in the daytime; it ought to be removed at night. The mehtirs here—both public and private—take away the filth in open baskets. The baskets should be covered, and the men should not appear later than eight o'clock. The brick-kilns or lime-kilns on the east side of the City,

Daragunge Road side, are objectionable when they burn human ordure. The practice of throwing sewage-water on to the roads by private and public sweepers is objectionable. I do not object to the conservancy carts running from 10 P. M. to 8 A. M. The drainage at Badshahee Mundee and Aheerpore is very bad. The lanes should be levelled, and the streets provided with side-drains.

Evidence of KHETTER MOHUN GHOSE, *Editor of the "Reflector," Allahabad.*

Q. 316.—How long have you resided in Allahabad?

A.—Since 25th March, 1869.

Q. 317.—Do you reside in the City?

A.—Yes, at Johnstongunge.

Q. 318.—What do you think of Allahabad in regard to cleanliness?

A.—I think it is the worst city I have ever seen—Calcutta not excepted. The latrine-waters are sprinkled all over the roads. The people commit nuisances both day and night—sometimes in the presence of the police. I once handed over a person for committing a nuisance. I never heard anything more about it. The pathways, alleys, and lanes are excessively dirty. I have no complaint to make of the main roads. There are more nuisances, I should say, committed here than in the Native cities I know, for example, Benares. This I attribute to the want of latrines. The conservancy carts are allowed to stand in places where, in my opinion, they ought not to be, *e. g.*, the north-east corner of the Chowk and other places, and sometimes the carts are full of filth when standing there. The carts are closable; they are carried at unseasonable hours, and they emit a very bad smell. I have frequently had complaints on the subject, and I have been frequently and influentially urged to bring this to notice in the paper I edit. I have once or twice written on the subject. Shahgunge post, at the Gunda nullah, is a very objectionable place. The brick-kilns burning are to be complained of. The *nabdans* and *choubuchhas* are objectionable, because they are not kept clean; and the latter interfere in some cases with the free run of the drainage. I think matters might be remedied by each householder being obliged to keep two *nabdans*, one to receive sewage and the other the dirty water used in the house for personal purposes; the contents of the former to be removed, and of the latter to be thrown over the road. I think it would be a good thing to have head mehtirs, who, with their subordinates, would be charged with the keeping clean a certain number of houses; the chowdhrees to be paid by the Municipality, and the householders to pay for the mehtirs. I don't think there would be any objection on the part of the inhabitants of the City to contribute by a small tax to the expenditure on the conservancy. I think the supervision of the conservancy of the town might be entrusted to the inhabitants of the City, letting the more respectable men and men of position undertake this duty, and giving them power to punish for breaches of conservancy. In my own opinion, the people would then come forward to make their complaints. For instance, I myself, living in Johnstongunge, would refuse to come up to the Magistrate's Cutcherry to make a complaint; but I would not hesitate to complain to the Native gentleman entrusted with the supervision of the conservancy in Johnstongunge. Slaughter-houses should not be allowed indiscriminately in the City; but I understand orders have lately been passed on this head. The meat and fish markets require supervision, specially in regard to the quality of the fish. I think the lower orders prefer stinking fish.

Evidence of DR. LUNDY, *in charge of H. M.'s 58th Regiment.*

Q. 319.—When did you arrive at Allahabad?

A.—On the 1st January, with my regiment.

Q. 320.—Do you consider the barrack-accommodation in the Old Cantonments to be good?

A.—As far as the accommodation goes it is good; the locality I take to be open to objection—the Clydesdale Lines in particular. They are surrounded nearly on all sides by bazaars and tanks. I don't think the situation of the Chatham Lines objectionable; certainly not so much as the Clydesdale Lines; it is not exposed to the same influences.

Q. 321.—Could you give the Committee any information as to when the cholera commenced in your regiment?

A.—The first two cases in the first epidemic occurred in the Clydesdale Lines, at No. 8 building, on the 22nd March. Before we came down here, the men of the 107th had written up to our men warning them of No. 8, and I think No. 12 was the second building they mentioned; one was called Golgatha Lodge, and the other Calvary. I can give you information of the course the disease took on my return to camp if you desire it. In the last epidemic of July, the first cases came out of No. 12, in Clydesdale Lines. I think the drinking-water in the Lines is as good as in any other part of the Cantonments. I never detected anything unpleasant in it, and in connection with the Barracks. I have no complaints to make of the sanitary and conservancy arrangements; but the men in hospital complained of the bad smell coming from the Kuttra and Colonelgunge Bazaars, and we often experienced inconvenience and nuisance from the latrine at the back of the Lines, *i. e.*, of the left side of the road running from Government House to Colonelgunge. There was also a tank at the corner of the Kuttra and City Road which was at times very offensive.

Q. 322.—Were the 58th men in the habit of visiting the City?

A.—Yes; but on its becoming known that there was disease in the City (which was immediately after the first outbreak of cholera in the regiment) an order was published prohibiting the men from visiting the City. I have no idea how the disease originated. I was on leave at that time. But we have gone over the case again and again, and there is no proof, either in the first or last epidemic, that the men attacked had been in the City shortly before they were attacked.

Q. 323.—Do you consider the regimental latrines in the Old Lines were in good order?

A.—Yes, as far as they could be; but the urinal receptacles were very old, and in many cases worn-out. Application was made to have them renewed, but there were none in store. To remedy any defects, charcoal was kept in the surface-pans, and loose earth, which was removed daily, kept beneath the receptacle itself. In addition, the floor of most of the urinaries was dug to a depth of about two feet, and fresh earth put in.

Q. 324.—Do you attribute the late outbreak of cholera in the Old Cantonments to any local cause?

A.—I do not know that the cause of cholera is known, but I consider that the locality of the Old Barracks is favourable to the development of the disease when once originated, *i. e.*, to its further progress.

Q. 325.—Have you noticed anything unpleasant in the nullah which runs through the Clydesdale Lines?

A.—Yes; it was twice complained of—first in February and afterwards on the return of the troops from the cholera camp to barracks, and I attribute the unpleasantness to the Natives having used the nullah for purposes of nature. Natives were stopped from using the surrounding land as a thoroughfare, and the nuisance ceased.

Q. 326.—Do you think the land between Chatham Lines and Papamow a fit locality for the residence of European troops?

A.—I have not gone over the ground, but I would not select it as a site for troops. Under the present circumstances, I have no doubt it is a preferable locality to that of Clydesdale.

Q. 327.—Do you think the site of the New Cantonments better than that of the Chatham and Wellington Lines as a place of residence for British soldiers?

A.—I think so; but I think the site of the New Cantonments is open to the objection of being too near the Station, and not being sufficiently commodious for the number of buildings on it. The buildings are already too crowded, and they are not yet all built. I consider the hospitals are misplaced: they are in the rear of every barrack, and between the barracks and the officers'-quarters.

Q. 328.—What is your opinion of the conservancy of the New Cantonments?

A.—When we went there everything was in an unfinished state, and one can hardly give an opinion as to what might have been the case when all was finished. But as far as the surface of the ground was concerned, it was in a most filthy state. It was quite evident, from the smell and other signs, that the Barracks themselves had been used by the workpeople or others for the performance of offices of nature, and I have reason to believe they are still so used. A man was caught in the act in the Court-martial Room; that was about ten days ago, shortly after getting there. In the huts and little places the Natives had thrown up for shelter, we found a number of small-pox cases, some of them very bad. In the unfinished building which is to be the canteen, two cholera cases were found one morning—one in the last state of collapse. There were also two cases of cholera found in one of the unused married-quarters when we went there. The canteen cases were found a few days after we marched in.

Q. 329.—Do you think cholera was prevalent among the workpeople when the regiment marched in?

A.—I can't say whether it was or not.

Q. 330.—Was anything done to improve the cleanliness of the site?

A.—Yes, mehtirs were employed to cleanse the surface, and to take away the filth; but the cleansing certainly at first was superficial. Men were sent down two or three times to cleanse the place, and latterly police were sent down to see that the men did not defile the ground. Before we marched into the New Barracks, I had recommended the surface should be cleaned, and in answer was told my suggestion had been anticipated, and the place was being cleaned.

Q. 331.—Did you hear of any complaints about the want of swimming-baths?

A.—There were no swimming-baths ready when we went down there; but the men had ample means of ablution in the shape of half-tubs.

Q. 332.—Had you plenty of water?

A.—There was plenty, except drinking-water, which was always brought by bhiestees.

Q. 333.—Were any of the officers of the 58th Regiment attacked by cholera?

A.—No.

Q. 334.—Can you account for the officers, who were constantly with their men, enjoying such immunity from the disease?

A.—I think the officer's mode of living is more regular than that of the soldier; he is more cleanly and careful of his person, and lives in a purer atmosphere; he gets better food, and enjoys certain luxuries which do not reach the soldier. I think the hours of meals and variety of food all conduce to the officer's better health. By cleanliness of person, I also include change of clothing.

Q. 335.—Can you account for the cholera recurring in the various detachments of the 58th after their return from cholera camps to cantonments, especially on their return to the New Barracks, which had not been previously occupied?

A.—No. Each time that a detachment was moved out to a cholera camp, it shook off the disease, but immediately on return to cantonments the sickness broke out afresh.

Q. 336.—Did the detachments moving into camp take the whole of their kit and personal effects with them?

A.—The men took their bedding-kits and cots; certain portions of their effects were invariably left in store, packed in their boxes.

Q. 337.—Do you think it possible that the recurrence of cholera may be connected with the opening of these boxes on their return to barracks from camp?

A.—No means were taken to disinfect the men's effects left behind in the boxes which had been taken from the barrack-room to store, although such measures were taken for the purification of the buildings. To my knowledge, the above has never been carried out, although it is a measure which might be attended with favourable results.

Further Evidence of CAPTAIN GREGSON, *Assistant Quartermaster-General, Allahabad.*

Q. 338.—Will you be good enough to state whether the site of the New Cantonments has been made over to the military authorities, and when?

A.—It appears from a letter, dated 22nd July, 1865, from Mr. Ricketts, Collector of Allahabad, to the Brigade-Major of Allahabad, that possession of the New Cantonments was given to Captain Limond, R.E., Executive Engineer, on the 16th December, 1864. In this letter, Mr. Ricketts enters a marginal note, dated 1st September, 1865, in these words:—"I should have said nothing to say to the Revenue Collections but the Magisterial jurisdiction is as yet discharged." I give you a copy of the letter above alluded to.

Q. 339.—Were any orders issued through your Department regarding the conservancy of the sites of the New Cantonments after the land was made over to the military authorities?

A.—At the time the Cantonment is stated to have been made over, Allahabad was in the Oudh Division. It has since been included in the Old Benares, now called the Allahabad Division. It would require a great search among the papers of my office to afford the information required. As far as I am aware, no orders were issued through my office after my arrival in September last regarding the conservancy until the 58th occupied the Barracks in April last.

Q. 340.—Were the conservancy arrangements of the New Cantonments in April last ordered by General Harris?

A.—Yes; in communication with Colonel Hodgson, Secretary to Government, N.-W. P., P. W. D.: the Lieutenant-Governor, General Harris, Major Dennehy (Deputy Inspector-General of Police), and myself, were almost daily at the Barracks when the 58th were gone out in camp; and after a telegram was received from the Quartermaster-General, directing that on their return from camp the New Barracks were to be occupied, every effort was made to get the Barracks completed as far as possible, the land levelled, and everything ready for the occupation of the troops. Nothing was done that I am aware of until the receipt of the Quartermaster-General's telegram.

Q. 341.—You have stated that General Harris gave orders for conservancy arrangements in the New Cantonments in April last. Did he give any orders before?

A.—Not through my office; but he might through the Brigade Office.

Q. 342.—Had General Harris in the interim obtained power to make any conservaney arrangements?

A.—I am not aware. The Barracks being about to be occupied by troops, it stands to reason that he would have power.

Q. 343.—Then do you consider that his power commenced from the occupation of the troops, and not before?

A.—I can't say when his power commenced. Before the occupation of the Barracks, I should consider that the Public Works Department would be responsible for the sanitary measures necessary on account of the workpeople. This idea is also borne out by a circular from the Government of India and Local Governments, since issued, on the subject.

Q. 344.—The Department Public Works being a subordinate Department, under whom do you think their responsibility would be discharged?

A.—In the case of a cantonment already occupied, no doubt the General Officer is responsible; but in the case of a new cantonment like that of Allahabad, where large works are going on, I should say that the Public Works Department, under the Chief Engineer, were responsible. This appears to be borne out by the circular above quoted.

Evidence of J. C. ROBERTSON, ESQ., *Officiating Magistrate, Allahabad.*

Q. 345.—How long have you been here?

A.—As Magistrate since January, 1868.

Q. 346.—Have you anything to say about the conservancy arrangements of the City?

A.—I have submitted a letter giving as many details as I could, and stating my opinion. I wish to add that I don't wish it to be thought that, because I have compared the last two years with other years, I have intended to cast any discredit on my predecessors. We have more money to spend owing to the octroi, and I look at the conservancy question as one of money and of increased executive officers. Whatever funds I have had I have devoted to sanitary purposes, and none to ornament. The conservancy is defective, because more public latrines, and more than double the number of carts now in use, and necessary establishment, are required. I don't approve of the burying of the filth; but I don't see under the present system how anything else can be resorted to. If the drainage was improved, it would be an assistance to the conservancy; and a drainage system is absolutely necessary. The City is kutcha, and the roads too, except the main lines. I think the side lanes ought to be paved according to an experiment lately tried. The main road should be metalled, and have saucer-drains; in kutcha roads, saucer-drains are useless. There is a scheme before Government for drainage.

Q. 347.—What are the arrangements for cleaning the City latrines?

A.—There are sweepers told off to them, and carts to each latrine, except the temporary ones. There are nine jemadars, too, who have to supervise the arrangements. The temporary latrines are trenched. The establishment kept up is noted in the statement I have submitted to the Committee. I think that with the funds we have our arrangements are good; but we require much more money: and in this weather open latrines cannot be kept clean.

Q. 348.—Where is the filth buried?

A.—Outside the City, and it is also burnt in brick-kilns; but, as I have remarked in my letter, I think the burning is a nuisance. We have a great difficulty to contend with in arranging for the burial of the sewage in the confined state of the Settlement. I think it ought to be taken further off, but that will increase the expense very considerably.

Q. 349.—What arrangements have been made for removing the dirty water from the cesspools?

A.—It is ordered to be taken away in carts. I have heard several complaints of the sweepers having thrown the sewage-water on to the roads. I have always punished the sweepers when they have been detected doing this.

Q. 350.—Have you ever tried making the City Municipal Commissioners assist you?

A.—Yes, I have. The result has been that they have been of no assistance. Even in the matter of registration of deaths, I have found they have always delayed me.

They have no powers to punish for infraction of the law. I would make an exception in favour of Gya Pershad, who really does interest himself in the matter. I may add that no City Municipal Commissioner, except Gya Pershad, has ever brought to my notice the fact of any one having committed a nuisance.

Q. 351.—Are there slaughter-houses on the City side?

A.—There were till lately, when I removed them outside. The butchers there struck, and one of the most influential Municipal Commissioners came and implored me to let them continue slaughtering in the midst of the City. The old slaughter-house was offensive. I gave them land for their new slaughter-house, but have not built a new slaughter-house for them.

Q. 352.—What do you consider of the drainage of the City?

A.—Decidedly defective. The Municipality, without help, cannot undertake a proper system of drainage even for the City; they have not the funds.

Q. 353.—Do you think the carts (conservancy) remain standing in the middle of the Chowk?

A.—Yes, I dare say they do. They used to be kept standing in the Chowk when they were empty. They were not clean. They are now put in separate lines apart from the houses.

Q. 354.—Do the filth-carts travel in the daytime?

A.—They may from their paucity be obliged to be out in the day, but it is simply a matter of money. If a man is found unnecessarily detaining his cart, he is invariably punished.

Q. 355.—What do you think of the conservancy of the Civil Station and Old Cantonments?

A.—The remarks I have made about the City apply equally to these. We cannot manage properly without more money, as I have repeatedly pointed out to Government, in my letters to Government sent in with memorandum to the Committee.

Q. 356.—Who has the supervision of the conservancy in the Civil Station?

A.—Under myself, two European Inspectors of Nuisances, whose duty it is to report every case to myself or the Municipal Commissioners, and who take out summonses against persons committing nuisances. These men have a difficult task to perform: if not zealous, I come down on them; and if they are zealous and bring complaints, they are the subject of complaints again by the persons whose houses they look after. In one case, a Mr. Cribble sued the Inspector for trespass, because he had inspected Mr. Cribble's latrine and reported it dirty.

Q. 357.—Where is the filth buried?

A.—Towards Rajapore: the area is very circumscribed.

Q. 358.—Do you think the public latrines are good institutions?

A.—I think they are better than nothing; but they require a larger establishment. In the Civil Station we have a byelaw to compel private householders to provide latrines in the different houses. It is the duty of the Inspector of Nuisances to see the filth is properly buried.

Q. 359.—What do you think of the drainage of the Old Cantonments and the Old Civil Station.

A.—In the Civil Station it seems to be pretty fair. On one side, however, you are shut in by a bund, which makes it difficult to drain. I know nothing of the Old Cantonments. In Cannington the drainage is defective in several places, but I have always understood this is to be taken up in connection with a scheme for draining the New Cantonments.

Q. 360.—Do you consider there is overcrowding in the vicinity of the Cantonments?

A.—Yes; but it is a difficult matter to arrange for. I tried in one village to make a clearance. I have discussed the matter fully in my letter to the Committee. As soon as the rains are over, we are going to attempt to carry out a systematic clearance.

Q. 361.—Do you know anything about the state of the land in the vicinity of the New Cantonments?

A.—I believe people used to go all over the fields there for the purposes of nature. I have always considered the land in the New Cantonments to be under the Military authorities.

Q. 362.—Did the Civil authorities make over the New Cantonment land to the Military, and when?

A.—Yes; it was not made over by me, but before January, 1868. I produce letters which relate to the transfer of the land :—

Executive Engineer to Joint Magistrate, No. 662, dated 13th December, 1864.
Collector to Executive Engineer, No. 319, dated 16th December, 1864.
Brigade-Major to Joint Magistrate and Collector, No. 1012, dated 22nd July, 1865.
Collector to Brigade-Major, No. 183 of 1865.

There is also a vernacular proceeding from the Tehseeldar of Chael, of which I will give a copy, shewing that the land was transferred.

Q. 363.—Have you made any arrangements for the conservancy of the land taken up for the High Court Judges.

A.—Yes; the police patrol the ground. But there are difficulties to meet; for instance, one of the contractors repeatedly accused the police of trespass in arresting coolies, employed by him, for committing nuisances.

Q. 364.—Do you think the Allahabad Settlement sufficiently large to require the services of a Magistrate for itself?

A.—Yes; most decidedly so. He should be on the same footing as the City Magistrate at Lucknow.

Q. 365.—How many assistants have you?

A.—I have an ordinary district establishment at present—one Joint Magistrate, one Assistant with full powers, a young Assistant learning his work, and two Deputy Collectors, one of whom is in charge of a very heavy Treasury.

Evidence of Revd. H. Linton, *Railway Minister, Allahabad.*

Q. 366.—How long have you been at Allahabad?

A.—Nearly three years.

Q. 367.—Where do you reside?

A.—Close to the Railway Barracks, in South Road.

Q. 368.—Do you consider the mortality and sickness among your congregation have been larger this year than in other years?

A.—I do not consider they have been larger, though I have buried five persons—cholera cases—this year against five in the two previous years. The Church of England Railway congregation numbers about 160, women and children inclusive.

Q. 369.—Do you consider Cannington, as a rule, to be healthy?

A.—Yes.

Q. 370.—Have you ever lived in any other part of India?

A.—No; but I have seen cholera in other places—in England and Gibraltar.

Q. 371.—Do you consider the conservancy of the Railway Lines and Cannington to be good?

A.—It is tolerable. The sewage-water from some of the bathing-rooms is allowed to run into cesspools outside the houses, and is not cleaned out so often as it might be. There is an establishment kept up by the Railway for conservancy purposes.

Q. 372.—Do you ever notice anything unpleasant from the tanks between the South Road and the Railway?

A.—No. I have heard them complained of; but I don't know of any people living near them having suffered from them.

Q. 373.—Do you notice anything offensive from the drain at the back of the workshops?

A.—No.

Q. 374.—Is there anything you wish to state to the Committee?

A.—We have found the men who have led the most intemperate lives have been the first attacked by cholera.

Evidence of CAPTAIN ANDERSON, *Her Majesty's 58th Regiment, Allahabad.*

Q. 375.—Were you with your company at the New Barracks when the regiment first occupied them?

A.—Yes; I went in with the headquarters on the 6th May: a detachment had occupied the New Barracks previously. I was not with that detachment.

Q. 376.—Was the ground in a bad state when you arrived there?

A.—Yes, in a most filthy state; and smells all over the place. The unoccupied Barracks contained human deposits. The ground, too, was cut up, and very uneven and broken. The worst part of the ground was between us and the 4th N. I., *i. e.*, adjoining the married-quarters. We lost a good number of the married people. Their quarters were confined, and not well ventilated; they also had a tope of trees in front of them, which I believe was ordered to be cut down. The men's and officers' Barracks were very hot—much more so than those occupied by the troops in the Old Lines. I used to ask the men in the morning what sort of nights they had had, and they complained of the Barracks being very warm, and said they liked the Old Lines better than the New Barracks. They had punkahs. The men lived above, and only went below for their meals and recreation. The punkahs were pulled day and night, except between 5 and 8 in the morning and about 5 or 6 P. M. to 9 P. M; but in the married-quarters they were pulled continually. The Barracks are not in *echelon*, which is a great defect, as they didn't get sufficient ventilation. There were no appliances for the men's bathing; we had to give them tubs. But there were no swimming-baths, and they wanted them on account of the dust, which was very great, arising in regular clouds. The tatties were kept in good working-order, but even when we had good winds, the Barracks were warm.

Q. 377.—Was there plenty of water at the New Barracks?

A.—No. I think they ought to have a supply of water brought from the Ganges in pipes, being raised by steam power. I believe you could serve the water into every Barrack there, and save a large establishment of bhiestees.

Q. 378.—Do you know of any cases of soldiers who do not bathe daily?

A.—Not in my own company; I believe every man bathed. I used to be very particular that they should bathe, and the tubs were always kept full of fresh water. But men prefer a swimming-bath. There is no difficulty in inducing them to bathe with a swimming-bath; and when we were encamped near Papamow, the men would always go down to the river to bathe.

Q. 379.—How many swimming-baths are there at the New Barracks?

A.—There are two, and they are very small; they are not enough for a regiment. They ought to have four at the very least, and they should be larger than the present two. The present ones are about 40 feet long, and not more than 12 or 15 feet broad, and have semi-circular bottoms not deeper than 5½ feet. This is the size, to the best of my belief. One of the baths was in use for a few days before we left, and the men resorted to it very freely; we could hardly keep them out.

Q. 380.—Are the officers' quarters good?

A.—They are very hot, and they were not completed; the doors and windows in my quarters were only completed the day I left.

Q. 381.—Did you hear that cholera was present among the workpeople or Natives about the Barracks at the time the headquarters moved in?

A.—Yes, we heard of several cases; and in the huts about the Barracks there were several deaths.

Q. 382.—How many bhiestees are allowed to each company?

A.—Four to a full company. They are hardly sufficient to supply water for the tubs of the men of a full company. When we went to the North Barracks, the wash-houses were not complete. In the Mansfield Lines, when I was there, we had no bullocks to draw water from the wells, and the bhiestees had to draw the water themselves.

Q. 383.—What is your opinion of the Old Barracks?

A.—I should say they are very bad. Do what you will you can't keep them clean, however you may wash and scour them. But I think the men prefer them altogether to the New Barracks; they are less hot and nearer the bazaars.

Q. 384.—Were there any complaints about the regimental latrines at the Old Barracks?

A.—Yes, the men did complain. They were regularly saturated with urine. At the Chatham Lines I had the floor dug up about three feet, and fresh earth put in; and still the place smelt. I think the walls and ground around must have become saturated. In these urinals there is no ventilation from below, which is necessary in my opinion. In the latrines, I used to see the seats cleaned every morning; but the places below could not be cleaned, and were saturated with impurity. I think the latrines should be thrown down, and the thatches burnt on the top of them. It would cost very little money to build new ones. I believe the Clydesdale Lines and the Chatham Lines are built on the top of old burial-grounds. The thatches also I think are not renewed often enough. In the Clydesdale Lines very often a most offensive smell used to penetrate from the filth-pits behind the burial-ground. The conservancy carts are to be met with at all hours in the day instead of in the night.

Q. 385.—Was dry earth used in the regimental latrines to deodorize the impurities?

A.—Yes; there was always a quantity of dry earth placed in front of the seats, and a tile to enable the men to make use of the earth; and there was a conservancy mehter always in attendance. The pans below the seats do not fit the seats, and there are apertures between them through which the urine could pass and fall on the floor below.

Q. 386.—When you march into cholera camp, do the men take everything they have of their own with them?

A.—Yes; they leave nothing in the barrack-boxes.

Q. 387.—Were you at Benares with the wing of your Regiment?

A.—Yes; not all the time. I was there all 1865, but December; and joined again at Benares in October, 1866, and have since then been with my Company in the plains, both at Benares and Chunar, excepting three months I was at the hills in 1867.

Q. 388.—Had the 58th cholera at Benares?

A.—Yes, a slight outbreak; we lost only a few men. I was not at Benares at the time. It was in 1866 when I was there, I think. There were a few straggling cases in different months; but we never had to march into cholera camp.

Q. 389.—Was the regiment healthier at Benares than Allahabad?

A.—At first we were overcrowded; that was in 1865. We were obliged to send two strong companies to Azimgurh. After the headquarters went to Darjeeling, overcrowding ceased, and we were very healthy after that.

Q. 390.—Do you think the barracks are better at Benares than here?

A.—Yes, I think so. They were very much more open, and you could always keep them nice and tidy. The men liked Benares very much. They don't complain of this place; but, from the casual remarks I have heard from the men, they preferred Benares very much to this. They could get away more easily into the country, and they had more amusement. With the exception of this outbreak of cholera, I think the health of the men has been much the same at Benares and Allahabad; but I would give the preference to Benares.

Q. 391.—Do you think the men can get liquor here easier than at Benares?

A.—Yes; they can get as much liquor here as they can pay for, *i. e.*, more European spirits.

Q. 392.—Could you give an opinion as to the immunity of the officers from cholera while the men have suffered so much?

A.—I think the variety in diet which the officers can command may have something to do with it. Then, again, the pint of beer the men get in the middle of the day—which is warm and not iced—I should think was a bad thing for them. They have very little variety in their food—beef six days of the week and mutton one day. They get vegetables in as great a variety as possible; but there is no great variety in the hot weather and rains. No ice is given, except to patients in hospital. I have often seen the men buying their seer of ice from the machine here.

Q. 393.—Are the rations good here?

A.—On the whole, very good; but not so good as at Benares. We had excellent meat at Benares under Colonel Mills, who was Commissariat Officer.

Evidence of DR. CATHERWOOD, *Staff Assistant Surgeon, H. M.'s 58th Regiment, Allahabad.*

Q. 394.—When did you arrive at Allahabad?

A.—On the 15th January, with the wing from Benares.

Q. 395.—Do you consider the barrack-accommodation in the Old Cantonments to be good?

A.—No; I think it is situated too near the Bazaar; and, from the fact of cholera having broken out every year, it appears that the Barracks are not good for European troops. I do not condemn the accommodation, but the site. I think the Clydesdale, Chatham, and Mansfield Lines are all equally bad, though the Chatham Lines are not so closed in by bazaars; yet I don't think that makes any very perceptible difference. We have had more cases of cholera from the Clydesdale Lines; but that would be accounted for by the longer time we remained, and the larger number of men in the Clydesdale Lines.

Q. 396.—Were the regimental latrines in the Old Lines in good order?

A.—Yes; there was unpleasant smell sometimes, but not more than I have noticed in other latrines. I never heard that the men complained of them.

Q. 397.—Do you attribute the late outbreaks of cholera in the Old Cantonments to any local cause?

A.—No; unless the defective situation of the Barracks would be so considered. The buildings are old, and the thatching rotten—I should say it is never thoroughly renewed. It seems to me as if the new thatch were placed over the old.

Q. 398.—Have you noticed anything unpleasant in the nullah running through the Clydesdale Lines?

A.—No, I have not.

Q. 399.—Have you noticed that men who had been quartered at Darjeeling, and men fresh from England (the last draft), suffered more from cholera than the men who had come from Benares?

A.—Yes; I believe they suffered more from cholera.

Q. 400.—Did the cholera commence among the Darjeeling men?

A.—I was at the Fort at the time. I came in, I think, a day or two after it broke out; but I understood it broke out among the Darjeeling men.

Q. 401.—Could you account in any way for this?

A.—No; I have no theory on the subject.

Q. 402.—Do you think the land between Chatham Lines and Papamow a fit locality for the residence of European troops?

A.—I could not say; I have not examined it.

Q. 403.—Do you think the site of the New Cantonments is better than that of the Chatham and Wellington Lines as a place of residence for British soldiers?

A.—Yes; I think it is.

Q. 404.—Do you think the site of the New Cantonments is open to objection?

A.—No; I don't think it is.

Q. 405.—What is your opinion of the conservancy of the New Cantonments?

A.—I went up to the New Barracks on the 17th April, and found the ground very dirty with human fæces; some of the Barracks contained nightsoil.

Q. 406.—Did you hear of any cases of cholera having occurred among the workpeople employed about the Barracks before your detachment marched in?

A.—No; I had no accurate information on that subject. I heard afterwards there were some cases of cholera among the workpeople.

Q. 407.—Was anything done to improve the cleanliness of the site?

A.—We went in on the 17th; marched out on the 20th or 21st. I remained behind with the cholera patients, and while I was there I saw some (a very few) coolies or others going about to pick up the dirt, and I believe some police were kept there to prevent Natives using the place as a latrine, and some latrines were made for the Natives at a distance from the Barracks.

Q. 408.—Did you hear of any complaints about the want of swimming-baths?

A.—No; I heard there was difficulty in getting the bath filled.

Q. 409.—Do you think one bath is enough for a regiment.

A.—No.

Q. 410.—Was there only one bath?

A.—Yes, I believe there was only one bath when the regiment was there. The bath is not very large. Of the size of this bath at least four baths would be required for a regiment 800 strong.

Q. 411.—Had you plenty of water?

A.—We had plenty of drinking-water, but not enough for keeping the tatties wet. I think there was enough for the men's tubs; at least, I never heard any complaints on that score.

Q. 412.—Were any of the officers of the 58th attacked by cholera?

A.—None were.

Q. 413.—Can you account for the officers, who are constantly with their men, enjoying this immunity from disease?

A.—Perhaps their habits of greater cleanliness, and their having separate and more accommodation, and their food being more varied and of a better description, might account for it; otherwise, they and the men are in the same condition.

Q. 414.—Can you account for the cholera recurring in the various detachments of the 58th after their return from cholera camp to the Cantonments, especially on their re-occupation of the New Barracks which had then been previously occupied?

A.—I think, as regards the Old Barracks, they returned to an infected circle; and this would apply to the New Barracks too, as I think cholera was epidemic all about Allahabad.

Q. 415.—Do you know whether the detachments going into cholera camp would take the whole of their kit with them, or did they leave any of it behind?

A.—I don't know; but it is customary for them to take the whole of their kit.

Q. 416.—Are you of opinion that, as a place of residence, Allahabad is unfavourable to the health of Europeans?

A.—Yes, I think it is. I think it is more so than Benares, as far as my experience goes; but I refer particularly to cholera. Excluding cholera from my calculations, I should think the health of the 58th has been much the same at Benares and Allahabad.

Evidence of Revd. J. Robinson, *Allahabad.*

Q. 417.—How long have you resided at Allahabad?

A.—I have been here twice; once for four months, from 1st December, 1864, to 31st March, 1865, and again from the middle of December, 1867, to the present time. I live in the old Civil Station.

Q. 418.—Do you consider the conservancy of that part of Allahabad which you know to be good?

A.—Yes, I think so; the carts come properly and regularly. On two or three occasions during the whole of my stay here, I have met conservancy carts traversing the station in the daytime.

Q. 419.—Do you ever experience any inconvenience from the tank close by the Artillery Lines, which is not far from your house?

A.—No. I have been told I should, but I never have.

Q. 420.—Or from the nullah which runs by your house?

A.—No. I should give exactly the same answer as to the former question. I was told it was one of the inconveniences of the house, but I have never found it so.

Q. 421.—Do you consider this year has been an exceptionally bad year for sickness?

A.—As regards cholera, certainly; not as regards other sickness, as far as my knowledge goes.

Q. 422.—Do you consider Allahabad as a place of residence unfavourable to the health of Europeans?

A.—Before the mutiny I used to pay occasional visits here. It used then to be considered a healthy place. Since 1857, I do not think it has been so healthy, although there have been several very healthy years since the mutiny. On the whole, I think it has obtained a bad reputation for healthiness. I have not been able to satisfy myself with any reason for this. I can't understand why it should be less healthy, but I can quite understand why the unhealthiness makes more reverberations, so to speak. There has been a great addition to the European inhabitants; and I think that if the relative mortality has increased, which I believe to be the case, the mortality would attract more notice. I believe the increased mortality to be attributable to epidemics.

STATEMENT OF THE SITTINGS AND PROCEEDINGS

OF THE

ALLAHABAD SANITARY COMMITTEE,

SITTINGS OF THE SANITARY COMMITTEE.

Wednesday, 1st Sept.—Present: The President, Mr. Plowden, Dr. Chalmers, Lieutenant-Colonel Wright, Dr. Planck, Dr. Cuningham, Superintending Surgeon-Major Thompson, attended.

Thursday, 2nd Sept.—Present: The President and all Members.

1 Dr. Thompson, Superintending Surgeon-Major, British Troops, and
2 Mr. Court, Commissioner of Allahabad, were examined.

Friday, 3rd Sept.—Present: The President and all Members.

3 Dr. Irving, Civil Surgeon, and
4 Major Hanmer, Cantonment Magistrate, were examined.

Saturday, 4th Sept.—Present: The President and all Members.

5 Captain Gregson, Assistant Quartermaster-General,
6 Captain Marriner, Her Majesty's 58th Brigade-Major,
7 Captain Jackson, Executive Engineer,
8 W. C. Hennessy, Esq., Executive Engineer, and
9 R. Carr, Esq., were examined.

Mr. R. Johnson, who had been asked to attend to give evidence before the Committee, being absent from the Station, could not comply with the request of the Committee.

Monday, 6th Sept.—The Committee did not sit.

Tuesday, 7th Sept.—Present: The President and all Members.

Dr. Irving, Civil Surgeon, was further examined.
10 Sheikh Furreed-ood-deen,
11 Mr. H. G. Cribble,
12 Mr. Fleming, and
13 Baboo Bhyrub Chunder Dass, gave evidence.

Wednesday, 8th Sept.—Present: The President and all Members.

14 Lalla Gya Pershad,
15 Narayen Singh, Kotwal,
16 Graham Peddie, Esq., Deputy Chief Engineer, East Indian Railway,
17 Kalee Dass Nundee, Sub-Assistant Surgeon,
18 Nizam-ood-deen, Native Doctor,
19 Sheikh Rujub Alli, pensioned Native Doctor,
20 Soobee, Native Doctor,
21 Sheikh Kurreem Bux, Native Doctor,
22 Jan Ali, Native Doctor, and
23 Sheo Pershad, Native Doctor, were examined.

Mr. Watson, Assistant to Dr. Irving, did not attend.

Thursday, 9th Sept.—Present: The President and all Members.

24 The Revd. F. Fagan, Garrison Chaplain,
25 Dr. Grant, 11th Bengal Lancers,
26 Dr. Wilson, 4th Native Infantry, and
27 Revd. T. Evans, Baptist Minister, were examined.

The attendance of the Revd. J. Williamson, Presbyterian Chaplain, and of Dr. Dempster, R.A., had also been requested; but the former gentleman was absent, and the latter on the sick list, and they were therefore unable to give evidence.

Friday, 10*th Sept.*—*Present:* The President and all Members.

28 The Revd. B. Davis, Church of England Mission,
29 The Revd. D. Mohun, ditto ditto,
30 Mr. J. T. S. Moore, and
31 The Revd. Father Francis, R. C. Chaplain, were examined.

The Revd. J. P. Walsh, American Mission, who had been asked to attend, was unable to be present.

Saturday, 11*th Sept.*—*Present:* The President and all Members.

32 Preconath Bose, Homœopathic Practitioner,
33 Khetter Mohun Ghose, Editor of the *Reflector*,
34 Dr. Lundy, Her Majesty's 58th Regiment, and
35 J. C. Robertson, Esq., Magistrate of Allahabad, gave evidence; and

Captain Gregson, A.Q.M.G., was further examined.

Monday, 13*th Sept.*—*Present:* The President and all Members.

36 Revd. H. Linton, Railway Minister, Allahabad.
37 Captain Anderson, Her Majesty's 58th Regiment,
38 Dr. Catherwood, Her Majesty's 58th Regiment, and
39 The Revd. J. Robinson, were examined.

Thursday, 16*th Sept.*—*Present:* The President and all Members.

No further evidence was taken, the Committee having adjourned to this date, to consider the evidence already recorded, to make their Report.

Monday, 20*th Sept.*—*Present:* The President and all Members.

The Committee read their Report, and adjourned *sine die*.

ORDERS OF GOVERNMENT FORMING THE COMMITTEE AND MISCELLANEOUS CORRESPONDENCE.

No. 81A., dated Nynee Tal, the 25th August, 1869.

From—R. SIMSON, ESQ., *Secretary to the Government, North-Western Provinces,*

To—J. F. D. INGLIS, ESQ., *Civil Service.*

SIR,—I am directed to forward a copy of a letter* and of its enclosures from the Government of India, in the Military Department, and to inform you that His Honor the Lieutenant-Governor has been pleased to order that a Committee, of which you are appointed the President, and the officers noted in the margin members, shall assemble at Allahabad on the 1st proximo, for the purpose of enquiring into the cause of the recent outbreak of cholera in that Station, and of reporting on the sanitary condition of Allahabad and its immediate neighbourhood.

* No 252, dated the 14th instant.

W. C. Plowden, Esq., Secretary to Board of Revenue, to be Member and Secretary.
Dr. Planck, Sanitary Commissioner,
Dr. Richardson, Officiating Superintendent of the Central Prison, Allahabad, to be Members.

2. The Major-General Commanding at Allahabad has been requested to nominate two officers as members of the Committee.

I have, &c.,

R. SIMSON,
Secretary to the Government, N.-W. P.

No. 252, dated Simla, the 14th August, 1869.

From—MAJOR-GENL. H. W. NORMAN, C.B., *Secy. to the Govt. of India, Military Dept.*,

To—R. SIMSON, ESQ., *Secretary to the Government, North-Western Provinces.*

SIR,—I am directed to forward, for the information of the Hon'ble the Lieutenant-Governor, the accompanying copy of correspondence* regarding the insanitary condition of the town and Cantonment of Allahabad and their environs, to which the senior Medical Officer on the spot seems to refer the severe attack of cholera which has visited the Cantonment.

* From Quartermaster-General, No. 2325, of 16th July, 1869, and enclosures.
To Sanitary Commissioner with the Government of India, of 22nd July, 1869.
From ditto, No. 657, of 26th July, 1869.

2. I am accordingly directed to request that you will move the Lieutenant-Governor to cause a Committee of qualified officers to be formed to investigate the matter closely, and to report on the sanitary condition of Allahabad and its immediate neighbourhood.

3. The formation of the Committee will be left to the Lieutenant-Governor, but His Excellency the Commander-in-Chief will be addressed in view to the services of any officer, military or medical, who may be required for the Committee, being placed at the Lieutenant-Governor's disposal, should His Honor wish it.

I have, &c.,

H. W. NORMAN, MAJOR-GENL.,
Secy. to the Government of India.

No. 2325, dated Simla, 16th July, 1869.

From—LIEUT.-COL. P. S. LUMSDEN, *Quarter Master-General*,

To—MAJOR-GENL. H. W. NORMAN, C.B., *Secy. to the Govt. of India, Military Dept.*

SIR,—In acknowledgment of Military Department letter No. 149, dated 10th May last, to the address of the Adjutant-General, remarking on the high proportion borne by the number of deaths to the number of admissions into hospital from cholera and choleraic-diarrhœa at Allahabad and Morar, the Commander-in-Chief desires me to forward, for the information of Government, a report from Superintending Staff-Surgeon Major Thompson, Her Majesty's British Troops, stationed at Allahabad.

2. The Commander-in-Chief requests me to say that this report has taken him entirely by surprise, as in truth it imputes to the Government of the North-Western Provinces, and the military authorities of Allahabad, the most shameful neglect of duty.

3. Considering Dr. Thompson's position, if the facts as related by him of abominable defilement and pollution of the surface of the area of Cantonments attracted his notice before he was called upon to report, he has been guilty of the grossest neglect in having failed to force his observations on the highest authorities in this country. But, in truth, His Excellency has never heard even a hint of his having so acted.

4. With respect to the Cantonments, His Excellency believes it to be absolutely impossible that the very careful General Officers who, during the last few years, have commanded at Allahabad, *viz.*, Generals Troup, Beatson, and Harris, can have so utterly neglected the regulations of the Government and of the General Orders of the army as to have allowed conservancy arrangements to be forgotten in the administration of the Cantonment.

5. The Deputy Inspector-General of Hospitals, British Service, and the Deputy Inspector-General of Hospitals, Indian Medical Department, are both on the Cantonment Committee, and it is their especial duty to see that the conservancy arrangements are not slurred over.

6. During his frequent journeys up and down country, it rarely happens that His Excellency does not visit the troops and barracks, and the several districts of the wide Cantonment, including the new town of Cannington, and all the old part known as the Cantonment of Allahabad.

7. His Excellency has in former years lived in Allahabad, and been fairly acquainted with the City and suburbs, and it is his firm impression that, with the exception of the difficulty caused by the point of confluence with the rivers being a resort of thousands of pilgrims every year, the account given by Dr. Thompson is of the most exaggerated character.

8. The City certainly used to be very well kept, and it is impossible to assert that in the Cantonments of Allahabad the houses are in any manner disagreeably affected, as is the case in the large crowded cities, such as Calcutta, Benares, or Bombay.

9. The New Barracks are built on what was virgin soil when it was first taken up, they being some miles removed from the place of resort of the pilgrims.

10. Dr. Thompson's own letter does, however, carry contradiction with it. He narrates how the climatic causes of sickness during this year have been of an intense character, and he further shews that when the population has been most dense, sickness of a dangerous character has made itself the least apparent. It is thus evident, from Dr. Thompson's own shewing, that the sickness has not proceeded from the causes contained in his charges.

11. His Excellency would further mention that, notwithstanding the extraordinary heat of the season, and, as shewn by Dr. Thompson, that heat-apoplexy and small-pox have been rife among Natives, the health of the troops, with the exception of cholera, as reported by the responsible authorities, has not been bad.

12. His Excellency would beg to suggest to Government that Dr. Thompson's report should be referred to the Sanitary Commissioner, with a view to its accuracy being absolutely tested.

13. If the sanitary facts of the City, the suburbs, and the Cantonment be such as alleged by Dr. Thompson, it is clear that a great reform is necessary, which must be vigorously taken in hand by the Government of the North-Western Provinces.

14. If, on the other hand, it is true that Dr. Thompson's report is one of exaggeration, and therefore of inconsistency with real fact, it is obviously indispensable that he should be contradicted by competent authority after a sufficient enquiry.

15. His Excellency would say that we must be careful how we receive statements with regard to large areas being defiled and polluted by the population of ages. The like may, of course, be said of all great cities and their purlieus.

16. But it is the aim of modern science, an aim which it is perfectly competent to reach, to indicate the effects of such defilements, and to substitute cleanliness and pure air in the place of the dangerous atmosphere which, in Native cities especially, used to be apt to pass without remark.

17. A great progress has been made in this respect of late years, even in India, wherever a British population proper comes into contact with a Native one.

18. This report, in His Excellency's opinion, is but one more instance of what we often see, *viz.*, of the attempt to lay down dogmatically the reasons of cholera, and to ascribe that fatal disease to the want of human precautions, whereas nothing is more certain, or more freely admitted by the highest medical authorities, than an absolute ignorance of the causes of the origin of the disease, and of the manner in which it is propagated.

I have, &c.,
P. S. LUMSDEN, LIEUT.-COL.,
Quartermaster-General.

No. 1507G., dated Allahabad, the 1st July, 1869.

From—MAJOR-GENL. P. HARRIS, *Commanding Allahabad Division,*

To—*The* QUARTERMASTER-GENERAL OF THE ARMY.

SIR,—With reference to the communications marginally noted, I have the honour to forward the statement in duplicate therein called for.

1. Copy of letter from Secretary to the Government of India, Military Department, to the Adjutant-General, No. 149, dated 10th May, 1869, forwarded with memo. No. 4052E., dated 15th May, from the Assistant Adjutant-General, Army Head Quarters.

2. Letter No. 1609, Epidemics, dated 9th June, 1869, from Quartermaster-General to Officer Commanding, Allahabad Division.

I have, &c.,
P. HARRIS, MAJOR-GENL.,
Commanding Allahabad Division.

Dated Allahabad, 23rd June, 1869.

Remarks by J. A. W. THOMPSON, ESQ., M.D., *Superintending Staff-Surgeon, Allahabad Circle, on an Epidemic of Cholera in the 58th Regiment, during the months of March, April, May, and June,* 1869.

1. CHOLERA first appeared in the 58th Regiment on the 21st of March, 1869, in the Clydesdale Lines, on which day two men were seized. On the following day, two more cases occurred amongst the men. The affected companies were moved out at once, but before they could get away, three more men were seized. All these cases occurred in two barracks in close propinquity to each other, and running north and south. The disease fell first upon the most northern of these barracks; ran through it to the next barrack. One man from another barrack not in a line with the two affected barracks was seized, but it was discovered that on the day of his seizure he spent several hours with a comrade in one of the affected barracks.

2. From the date of the removal of the affected companies to the 30th March, there occurred at headquarters of the regiment, five cases of cholera and one of choleraic-diarrhœa amongst the men, and one of cholera and one of choleraic-diarrhœa amongst the women and children; four cases, however, of cholera occurring on the 29th of March. On the 28th of March, a woman in the Mansfield Lines was seized with cholera. All the families were moved at once from these barracks.

3. On the 30th March, the headquarters and right wing moved into camp at Begum Serai, some seven miles distant to the N.W., a clear and elevated plateau, excellent drainage, open on all sides, good water, and with a good view of the Ganges.

4. On the 31st March, three men were seized with cholera. So far the disease may be said to have been contracted in Cantonments. On 1st April, one

child seized with cholera, and one with choleraic-diarrhœa. April 2nd, two men seized with cholera. Clearly the regiment was still within range of the choleraic influence.

5. April 3rd, moved camp to Cawnpore Road, some two miles N.W. of Begum-ka-Serai; encamping-ground excellent. From 3rd to 7th April, no return of the disease; on latter date, one woman seized with cholera, and one child with choleraic-diarrhœa. On 11th April, one woman seized with cholera, and one child with choleraic-diarrhœa. No return of the disease, and on the 21st April, the headquarters and right wing of the regiment marched into and occupied the barracks in the Chatham Lines. These barracks had been thoroughly cleansed and disinfected. On 5th May, one man seized with cholera; 6th May, one man with cholera; on the following morning, a move was made into the New Barracks. On the same day, two men were seized with choleraic-diarrhœa, and one child with cholera. 8th May, two children seized with cholera; and on 9th May, two men and two children were seized with cholera.

6. All these cases, which occurred in the New Barracks, were supposed to have brought the disease from the Chatham Lines, although it was rather singular that they should all have occurred amongst the married people. It being deemed advisable to thin the Married Barracks, thirteen families from the affected barracks were moved across the Ganges to the Jhoosie Rest-houses. No more cases occurred till the 12th of May, when *two* men were seized with cholera in double-storied barracks on either flank of New Barracks. On 15th May, one man seized with cholera. Immediate preparations made for a move into camp, but as it appeared the disease was losing somewhat of its epidemic character, it was considered wise to wait and watch, particularly as the heat was extreme. On 22nd May, one man seized with cholera—mild and tractable case. The epidemic seemed now to have ceased.

7. The left wing of the regiment moved into Chatham Lines on the 23rd March. On same day, one man seized with cholera and one with choleraic-diarrhœa. On following day, one man seized with cholera. So far the disease was considered to have been brought with the wing from the Clydesdale Lines. An interval of two days now elapsed without any fresh cases. On 27th March, one seized with cholera; on 28th, one man seized with cholera. On 29th March, wing moved into camp at Papamow, a fine elevated plateau overlooking a wide sketch of the Ganges, and possessing excellent water-shed and good water. March 30th, one man seized with cholera. An interval of four days without any fresh cases. April 4th, one man seized with cholera. Camp moved across the Ganges to Guddapore. Cholera ceased.

8. April 17th, marched into and occupied a portion of the New Barracks. April 19th, two men seized with cholera; 20th April, two men seized with cholera. Same evening moved across the Ganges to Jhoosie. Cholera ceased. Returned to New Barracks on 1st May. May 6th, one woman seized with cholera. May 7th, left wing incorporated with headquarters and right wing, and on same day two men were seized with choleraic-diarrhœa, and one child with cholera. May 8th, two children seized with cholera. May 9th, two men and two children seized with cholera. May 10th, thirteen families sent to Jhoosie Barracks, the disease seeming to be confined to the married people. May 12th, two men seized with cholera. May 14th, one man seized with choleraic-diarrhœa. May 15th, one man seized with cholera. An interval of seven days without a fresh case. May 22nd, one man seized with cholera. May 29th, three men seized with cholera—disease confined to no particular barrack or wing. May 30th, regiment redistributed through Clydesdale, Chatham, Mansfield, and Jhoosie Barracks, the

married people being widely scattered throughout the New Barracks. May 31st, two men seized with choleraic-diarrhœa in Chatham Lines. June 2nd, one man seized with cholera in Chatham Lines. June 4th, one man seized with choleraic-diarrhœa in Mansfield Lines. June 8th, one man seized with cholera in Chatham Lines. June 9th, two men and one woman seized with cholera in New Barracks.

9. All preparations made for another general move into camp. June 11th, two men, two women, and six children seized with cholera in New Barracks, and one man with cholera in the Mansfield Lines. All the families moved into camp on Cawnpore Road. June 12th, five men seized with choleraic-diarrhœa in the Chatham Lines, after partaking of some milk brought round for sale. One company from Chatham Lines, and one from Mansfield Lines, moved into camp on Cawnpore Road. One woman seized with cholera on the same day in the New Barracks. This woman was in attendance on her children, who were too ill to be moved. June 20th, no return of cholera. One company moved back to Chatham Lines. June 21st, married people and remaining company moved back to barracks, the former to the New and the latter to the Chatham Barracks; the married people being widely distributed in the upper storeys of the New Barracks.

10. June 21st, officially reported to the Major-General Commanding Allahabad Division, that *epidemic* cholera ceased in the 58th Regiment.

11. The attack of cholera here sketched was of a most virulent character. Even the Natives were in the habit of saying, in connection with their own sufferings, "we do not suffer much from cholera this year, but all who are attacked die." The epidemic burst upon us without any warning, and it was marked by a more obstinate resistance to remedial measures than was perhaps ever known before. The treatment consisted chiefly in the administration of antispasmodics, sedatives, calomel, sulphuric acid, diffusible stimulants, counter-irritation, hot applications all over surface, shampooing, soothing and nourishing drinks, iced drinks, and ærated waters. All during the season, cholera was heard of as cropping up occasionally throughout the district; never very sweeping in any of its visitations, but always very deadly. In the cities and towns in the immediate vicinity of Cantonments, the disease did not assume the epidemic form.

12. The Allahabad District, in common with a very large portion of India during the period embraced by this history, suffered from protracted and intense drought. Many wells became dry, and the inhabitants were in several instances reduced to the verge of famine, and to the consumption of inferior and frequently unwholesome food. Throughout the epidemic, the heat was extreme, and, I believe, unprecedented; the atmosphere thick, lowering, and oppressive; wind very variable, chopping from east to west, and from west to east. Tatties were seldom of any service. Sun-stroke was an every-day occurrence amongst the Natives, and small-pox prevailed amongst the Europeans and Natives. Apart from cholera, the season must be looked upon as a most unhealthy one. Somewhat remarkable, however, was it, that, though cholera raged in the 58th Regiment and in the villages in the district, the crowded cities and bazaars in the immediate vicinity of Cantonments escaped with comparative impunity.

13. The sanitary condition of the Allahabad Cantonments is of the most unsatisfactory nature, and, to make matters worse, it cannot well be otherwise, surrounded and hemmed in on all sides, as they are, by cities, towns, villages, shrines, bazaars, tanks, and nullahs—all foul-smelling and impure, with cholera and small-

pox ever hanging about them; in fact, the whole of the peninsula on which the Cantonments are built is saturated with the accumulated filth of centuries, due to dense population, the hordes of squalid and often diseased pilgrims, and latterly, to the vast numbers of workpeople employed, who, unheeded and unchecked, defiled the whole surface of the country far and wide.

14. All the foregoing circumstances taken into consideration, along with the unacclimatized condition of the bulk of the 58th Regiment, the wonder is that cholera did not rage more fiercely, and that it was kept in check as well as it has been.

15. Before the re-occupation of any set of barracks or lines, thorough cleansing and disinfection was carried out.

J. A. W. THOMPSON, M.D.,

Supdg. Staff Surgeon-Major, H. M.'s
British Troops, Allahabad Circle.

Return shewing when the 58th Regiment was attacked by Epidemic Cholera, the Number of Deaths prior to each move, and the Changes from one Locality to another.

Barracks, Camps, Dates of Movements, and Deaths previous to.	Deaths.			
	Men.	Women.	Chidren.	Total.
58th Regiment. Clydesdale Lines attacked by cholera on 21st March, 1869, ...	...	...	...	2
Previous to move of infected companies to Chatham Lines, on 23rd March, ...	3	...	...	3
Right Wing. Previous to move into camp at Begumka-Serai, on 30th March, ...	3	...	...	3
„ Previous to move from Camp at Begum-ka-Serai to Cawnpore Road, on 3rd April, ...	*11	2	2	15
„ Previous to move from Cawnpore Road to Chatham Lines on 21st April, ...	2	1	3	6
„ Previous to move from Chatham Lines to New Barracks on 7th May, ...	3	...	1	4
	22	3	6	31
Left Wing. Previous to move from Chatham Lines for camp at Papamow, on 29th March, ...	1	...	...	1
„ Previous to move from Papamow to camp at Guddapore, on 5th April, ...	1	...	...	1
„ Moved into New Barracks on the 17th April, ...	...	...	...	...
„ Previous to move from New Barracks to camp at Jhoosie, on 20th April, ...	1	...	...	1
„ Returned to New Barracks, on the 1st May, ...	...	...	...	...
	3	...	...	3
58th Regiment. Previous to move of a number of the married people to Jhoosie Barracks, on 10th May, ...	2	...	2	4
„ Previous to move of Regiment to Old Barracks and Jhoosie Barracks, on 30th May, ...	6	...	...	6
„ Previous to move of all the married people from New Barracks—one company from Chatham, and one from Mansfield Lines—to camp on Cawnpore Road, on the 12th June, ...	6	1	3	10
„ Previous to return from camp of married people and two companies, on 20th and 21st June, ...	2	1	2	5
	16	2	7	25

* Of these numbers, 8 men and 2 women died in hospital in Cantonments, being those cases of both wings which were left behind as too ill to be moved. They were borne on the returns of the headquarters. Only 3 men and 2 children died in camp at Begum-ka-Serai.

ALLAHABAD:
23rd June, 1869.

J. A. W. THOMPSON, M.D.,
Supdg. Staff Surgeon-Major, British Troops,
Allahabad Circle.

HER MAJESTY'S 58TH REGIMENT,

Return of Diseases, other than Cholera, admitted into Hospital from the 21st of March to the 18th June, 1869.

Date.	Diseases.				Date.	Diseases.			
	Fever.	Sun-stroke.	Diarrhœa.	Other Diseases.		Fever.	Sun-stroke.	Diarrhœa.	Other diseases.
March 21st, ...	...	...	...	...	Brought forward, ...	14	1	21	44
„ 22nd, ...	2	...	1	1	May, 6th, ...	...	...	...	2
„ 23rd, ...	...	...	...	3	„ 7th, ...	3	...	2	3
„ 24th, ...	...	...	...	...	„ 8th, ...	...	1	...	1
„ 25th, ...	...	...	...	...	„ 9th, ...	1	...	...	1
„ 26th, ...	...	...	1	...	„ 10th, ...	...	...	1	...
„ 27th, ...	...	...	...	1	„ 11th, ...	1	...	...	3
„ 28th, ...	...	...	...	3	„ 12th, ...	2	...	...	4
„ 29th, ...	...	...	1	...	„ 13th, ...	1	...	...	1
„ 30th, ...	...	...	1	2	„ 14th, ...	...	...	...	...
„ 31st, ...	...	...	...	1	„ 15th, ...	1	...	...	2
April 1st, ...	...	...	...	...	„ 16th, ...	1	...	1	...
„ 2nd, ...	1	...	...	...	„ 17th, ...	...	...	...	...
„ 3rd, ...	1	...	1	...	„ 18th, ...	...	...	1	1
„ 4th, ...	1	...	...	...	„ 19th, ...	1	...	2	1
„ 5th, ...	...	...	1	...	„ 20th, ...	...	...	...	2
„ 6th, ...	...	...	...	1	„ 21st, ...	5	...	1	3
„ 7th, ...	1	...	2	2	„ 22nd, ...	...	...	...	...
„ 8th, ...	...	...	...	1	„ 23rd, ...	1	...	...	1
„ 9th, ...	...	...	1	...	„ 24th, ...	1	...	...	...
„ 10th, ...	...	...	1	1	„ 25th, ...	1	...	...	...
„ 11th, ...	1	...	1	1	„ 26th, ...	2	...	...	3
„ 12th, ...	...	...	...	2	„ 27th, ...	...	...	...	1
„ 13th, ...	...	...	...	3	„ 28th, ...	2	...	1	3
„ 14th, ...	...	...	1	1	„ 29th, ...	2	...	...	...
„ 15th, ...	...	...	1	...	„ 30th, ...	9	...	...	4
„ 16th, ...	...	...	...	...	„ 31st, ...	1	...	...	1
„ 17th, ...	1	...	...	2	June 1st, ...	3	...	1	...
„ 18th, ...	...	...	...	1	„ 2nd, ...	1	...	2	...
„ 19th, ...	...	...	...	...	„ 3rd, ...	3	...	2	...
„ 20th, ...	...	1	...	1	„ 4th, ...	1	...	1	3
„ 21st, ...	...	...	...	2	„ 5th, ...	3	...	...	1
„ 22nd, ...	1	...	...	2	„ 6th, ...	1	...	...	...
„ 23rd, ...	...	...	1	1	„ 7th, ...	...	...	...	1
„ 24th, ...	...	...	...	...	„ 8th, ...	2	1	...	1
„ 25th, ...	...	...	...	1	„ 9th, ...	2	...	...	2
„ 26th, ...	...	...	...	1	„ 10th, ...	2	...	...	1
„ 27th, ...	1	...	1	2	„ 11th, ...	4	...	3	...
„ 28th, ...	...	...	3	...	„ 12th, ...	1	...	...	...
„ 29th, ...	1	...	...	...	„ 13th, ...	...	...	...	...
„ 30th, ...	1	...	1	...	„ 14th, ...	...	...	...	...
May 1st, ...	...	...	...	...	„ 15th, ...	...	...	...	...
„ 2nd, ...	...	...	...	...	„ 16th, ...	...	...	1	...
„ 3rd, ...	...	...	1	1	„ 17th, ...	...	...	...	1
„ 4th, ...	1	...	...	3	„ 18th, ...	...	...	...	1
„ 5th, ...	1	...	1	4					
Carried forward, ...	14	1	21	44	Total, ...	72	3	40	92

Total Cases of Cholera and Choleraic-Diarrhœa in the 58th Regiment, from the first appearance of the Disease, on the 21st day of March, 1869, to its disappearance on the 21st of June, 1869.

	Strength at the commencement of the Epidemic.	Admitted.		Discharged.		Died.		Remaining.		Remarks.
		Cholera.	Choleraic-diarrhœa.	Cholera.	Choleraic-diarrhœa.	Cholera.	Choleraic-diarrhœa.	Cholera.	Choleraic-diarrhœa.	
Officers, ...	27	...	...	...	...	...	...	...	...	
Men, ...	623	49	14	9	13	40	1	...	...	
Women, ...	75	9	...	4	...	5	...	...	...	
Children, ...	145	15	3	3	2	12	1	...	...	
Total, ...	870	73	17	16	15	57	2	...	...	

ALLAHABAD,
The 23rd June 1869.

J. A. W. THOMPSON, M.D.,
Supdg. Staff Surgeon-Major, British Troops, Allahabad Circle.

I THINK Dr. Thompson's description of the sanitary condition of the Allahabad Cantonments a little overdrawn.

1st July, 1689.

P. HARRIS, MAJOR-GENL.,
Commdg. Allahabad Division.

No. 499, dated Simla, the 22nd July, 1869.

From—LIEUT.-COL. A. JOHNSON, *Offg. Deputy Secretary to Government of India,*
To—*The* SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

SIR,—I am directed to forward the accompanying correspondence, in original, from the Quartermaster-General, containing a report on the nature of the cholera epidemic at Allahabad by the Staff Surgeon-Major, together with remarks on the neglected state of that Cantonment and its environs.

No. 2,325, dated 16th July, 1869, with two enclosures. Return requested.

2. I am to request that you will favour the Government in this department with your opinion on this latter point at your early convenience.

I am, &c.,
A. JOHNSON, LIEUT.-COL.,
Offg. Dy. Secy. to the Govt. of India.

No. 657, dated Simla, the 26th July, 1869.

From—*The* SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA,
To—*The* OFFICIATING DEPUTY SECY. TO THE GOVT. OF INDIA, MILITARY DEPT.

SIR,—I have the honour to acknowledge the receipt of your letter No. 499, dated the 22nd instant, forwarding letter from the Quartermaster-General, No. 2325, dated the 16th idem, with report* on the recent outbreak of cholera at Allahabad, and requesting an opinion on the neglected sanitary condition of that Station and its environs, as described by the Superintending Surgeon-Major.

* Herewith returned.

2. There is a natural tendency to endeavour to account for the appearance of cholera, or of any other disease, by the circumstances in which it occurs, no matter whether these circumstances are to all appearance the same as those which have existed in the same place in former years when the disease was unknown, or the same as those existing at the same time in other places in which, nevertheless, there has been no outbreak.

3. It appears to me that in this manner Dr. Thompson has somewhat hastily concluded that the recent epidemic of cholera at Allahabad can be accounted for by the insanitary condition of the Station and its vicinity. Even admitting that this condition is as unsatisfactory as he represents it to be, the fact remains that the disease was almost entirely confined to Her Majesty's 58th Regiment; that the Artillery quartered in the same Cantonment, close to the Chatham Lines, which were occupied by the 58th during a portion of the time, altogether escaped, and that the inhabitants of the City and Bazaars, in which there were the greatest crowding and the greatest want of cleanliness, suffered comparatively little.

4. Again, it is well known that Allahabad in some former years, in which the sanitary conditions as regards cleanliness could have differed but little from what they were during the present season, has had no cholera. Unfortunately, the disease has been a frequent visitor, but the fact that it has not appeared every year cannot be explained by merely local conditions.

5. The state of Allahabad, so far as I am acquainted with it, is certainly not worse than that of such places as Benares, Agra, Meerut, or other stations that might be named, which have not suffered this year as yet, some of which rarely suffer, and all of which occupy situations in the immediate vicinity of large cities, in which the filth of ages has more or less accumulated. It must not be forgotten, moreover, that one of the most terrible epidemics of recent years in India occurred at Meean Meer in 1861, when, out of a force of 2,452 men, women, and chil-

dren, there were 880 admissions in 40 days, and 535 deaths; and yet Meean Meer is far removed from Native population, and so far as I am aware had, till our occupation, been an uninhabited plain. As yet, it must be frankly acknowledged that we cannot account for the appearance of cholera, nor satisfactorily explain why it attacks one portion of a country or one section of a community and spares another; and the first step towards any knowledge on the subject is to confess our ignorance, and to draw no conclusions which are not strictly logical.

6. It will not, I hope, be concluded from these remarks that I underestimate the value of sanitary improvements in preventing the spread of cholera. On the contrary, such measures are undoubtedly the best safeguards we can adopt. It is indispensable that the conservancy and drainage both of cities and cantonments should be made as perfect as possible, and I would suggest that a special report should be called for from Allahabad, shewing what evils of an insanitary nature now exist, how far any of them have been peculiar to the present year, and what can be done to remove them.

7. With reference to reports on epidemics of cholera, I would observe that it is extremely difficult from an ordinary narrative, such as that detailing the recent outbreak in the 58th Regiment, to understand the different movements which have been made, and their results. The tabular statement appended to this particular report is also confusing, and as it gives deaths only, and not cases, the information it contains is very imperfect. I propose to consult the Inspector-General of Hospitals, Her Majesty's British Forces, on this point, with a view to devise some form of diary, or other means, by which the facts of each epidemic may be clearly stated.

I have, &c.,

J. M. CUNINGHAM,

Sanitary Comr. with the Govt. of India,

No. 1962B, dated Division Headquarters, Allahabad, the 30th August, 1869.

From—MAJOR-GENL. JAMES TRAVERS, *Commanding Allahabad Division.*

To—J. INGLIS, ESQ., C.S., *Senr. Member of the Board of Rev., N.-W. P., Allahabad.*

SIR,—At the request of the Lieutenant-Governor, North-Western Provinces, communicated in the Secretary to Government's letter as per margin* to my address, I have the honour to inform you that I have appointed two officers as members of the Committee about to assemble to report on the sanitary condition of Allahabad, and of which, I am informed, you have been appointed President.

* No. 86 of 1869, dated Nynee Tal, 25th August, 1869.

2. Agreeable to the suggestion of His Honor the Lieutenant-Governor, I have appointed Doctor Chalmers as a member of the Committee.

This officer, from his position as Deputy Inspector-General of Hospitals, Indian Service, and other qualifications, will, I am sure, be found most useful.

3. Lieutenant-Colonel T. Wright, Her Majesty's Bengal Staff Corps, Commandant 11th Bengal Cavalry (Lancers), is an intelligent officer, in whom I have much confidence, and I have therefore nominated him as the other member.

4. These officers' services will be held entirely at your disposal, and I avail myself of this opportunity of assuring you, that should it be in my power to assist your Committee in any way, I shall do so with pleasure.

I have &c.,

JAMES TRAVERS, MAJOR-GENL.,

Commanding Allahabad Division.

No. 106B., dated Allahabad, the 1st September, 1869.

From—J. C. ROBERTSON, ESQ., *Offg. Magistrate, and President Municipal Committee.*

To—*The* SECRETARY OF COMMITTEE REGARDING SANITATION OF ALLAHABAD.

SIR,—Apprehending that the investigations the Committee are commissioned to make may extend to the action taken by the executive officers of the district, and the Municipal Committee of which I am the President, I trust you will favour me by placing on the record of the minutes of your proceedings the following statement, and the papers submitted herewith, wherein I have endeavoured to shew the difficulties in the matter of sanitation with which I have had to contend, the measures which have been taken to effect that object, and the funds which are available and have been expended by the Municipality for conservancy and other kindred purposes.

2. The City and Station of Allahabad are situate on a peninsula hemmed in on three sides by rivers, and include in their area an immense extent of land generally of inconsiderable elevation, and of which the surface is in many places depressed below the river level.

3. It is obvious that under such circumstances the removal of filth and surface-drainage must, if efficiently carried out, be attended with very considerable difficulty and expense, for it would be necessary to raise the surface-drainage from the low-lying lands by steam, or some other power, to enable it to flow into the rivers, and to convey the nightsoil and sweepings either by water or by rail, and to deposit them out of the peninsula.

4. Another peculiarity of this Station is the number of small villages which are to be found within its limits; of these, some have been formed by squatters who have occupied confiscated land. Engagements have been taken from several of such occupiers to vacate their huts on the termination of the present rainy season. For the population which now occupies these, as I may term them, squatter villages, some provision must be made within the peninsula. Many are engaged in service, or in the supply of milk and other small products to Europeans, and therefore must reside within a reasonable distance of the European Station; others are the cultivators of the low-lying lands which are inundated by the river, and which I venture to think would, if uncultivated, be a far more pregnant source of disease than are at present the villages of the cultivators.

5. I cannot conceal from myself that if these cultivators are removed from the villages they now occupy, they will in effect be driven out of the peninsula. The rates of rent which often prevail in the Bazaar for the lowest class of houses are far in excess of what a cultivator could afford.

There are other villages which belong to zemindars and hereditary cultivators, who till the lands of their estates which fall within the area of the peninsula. It would be extremely hard upon these men to put the Ganges between them and their holdings, and, indeed, in many cases such a step would prohibit cultivation; yet, if they are not moved across the Ganges, they must be brought into the Station. It may be suggested that their lands might be taken up, and compensation paid for them; but a very large sum of money would be required for compensation, while the land would remain for an indefinite period unproductive in the hands of Government.

6. In my judgment, many of these villages must be allowed to remain, and if they are permitted to remain, they will necessitate a larger expenditure in the matter of conservancy, and impose on the executive officers greater labour in supervision, than would be required if the whole Native population of the peninsula were collected in the Bazaars.

7. The New Station of Cannington has been laid out without the reservation of land for public latrines, and difficulty is now experienced in finding suitable sites on which these may be erected.

There are, moreover, several large excavations within the limits of Cannington, which should either be filled up or deepened into tanks with masonry sides. This would also involve considerable expenditure. Another peculiarity of the whole Station is, that its inhabited area has been immensely extended during the last few years, and the rapidity of this increase has imposed on the Municipality the necessity of constructing new roads and drains out of the income of a very few years, whereas in other stations in which the increase in the inhabited area has been more gradual, the expense of the construction of new works by the Municipality has been thrown over a number of years.

8. The public works undertaken by Government and the East Indian Railway, attracted to the Station a very large labouring population, for which no adequate provision in the matter of houses existed; consequently, wherever new buildings are in progress, a large number of such persons will be found congregated in temporary huts, and this also occasions expense in conservancy.

9. Lastly, in examining the causes which conduce to the unhealthiness of this Station, it must not be forgotten that it is the entrepot for travellers from every part of India. Persons travelling from the Eastern or the Western Provinces, from Central India, or from Oudh, make a rest here; and no possible system of conservancy can guarantee a city so peculiarly situated from the introduction of contagious diseases from outside.

10. I have now detailed the special features of the City and Station which occasion more or less difficulty for sanitation. I must invite the Committee's attention to statements which will shew the measures taken by the Municipality, and the income which it had laid at its disposal for the purposes of conservancy.

11. The paper marked K. contains a detailed statement of the sums expended in conservancy from the 1st January, 1867, to the 31st July, 1869. The paper marked L. contains a detailed statement of the income and expenditure of the Municipality during the same period. From the latter document the Committee will perceive that the Municipal income was considerably reduced in 1868 by the Government Order* with respect to the octroi tax, which had been introdued on the 1st July, 1867. By referring to Statement K., you will perceive that the sums expended on conservancy in the year 1867 amounted to no more than Rs. 15,778, against an expenditure in the year 1868 of Rs. 40,846, and an expenditure of Rs. 21,959 in the first seven months of 1869.

* No. 25B. dated 6th February, 1869.

I have selected these three years for comparison, inasmuch as I took charge of the office of Magistrate and Collector of the District in January, 1868, and can therefore afford you precise information, should you desire it, as to the arrangements in respect of conservancy which I found to exist at that date, and as to the extension of these arrangements which has since been effected.

12. By comparing the Statement K. with the Statement L., you will ascertain what proportion of the Municipal income has been expended on sanitary measures, and I trust the Committee will be of opinion that the sums expended have been as large as was practicable, and as was consistent with that prudent control over expenditure which it was incumbent on me as the chief executive officer of of the district to exercise.

13. I may add that the total expenditure shewn does not represent the whole cost of conservancy, inasmuch as a great part of the work of supervision is performed by the executive officers and the Police Superintendent, of whose salary no portion is charged in these estimates.

14. Statement M. shews the conservancy establishment as it was on 1st January, 1867, and as it now is.

15. Except when employed on duty in the interior of the district, I have daily visited some portion of the City and Station, for the express purpose of supervising the sanitary arrangements; and most stringent orders have been issued to the police to enforce the Municipal Byelaws for the suppression of nuisances.

16. We are still obliged to dispose of the collected sweepings and nightsoil within the peninsula. During the dry season, a large quantity is consumed at the brick-kilns, which are themselves situated so close to the City as to be a nuisance, and which, as the population extends in that direction, must at no distant date be removed.

The sweepings and nightsoil are buried in trenches.

17. I need hardly say I disapprove of the existing arrangements for the disposal of the sweepings and nightsoil. I have been constrained to continue the system which I found in existence by the cost which would be entailed on the Municipality if it were to be removed beyond the neck of the peninsula.

18. It has been suggested that Hickie's scheme should be adopted, but several medical men of the Station, who have kindly favoured me with their opinions, have expressed doubts as to its practicability; and, until the success of the system on a large scale has been demonstrated, I have hesitated to press its adoption upon the Municipal Committee. I may, however, state that the results of the Darjeeling experiments are being watched by the Committee.

19. The state of the drainage of the City has been one ground of complaint, and I have always admitted that there is reason for the complaint; but it has not escaped the attention of the executive. From Statement K. you will perceive that the Municipality have devoted to the conservancy of the City its fair share of the whole expenditure. The map of the City which accompanies this letter will inform you of a scheme for the surface-drainage of the City, which has been carefully examined by the Superintending Engineer, and pronounced feasible. Until this scheme, or some similar scheme, be carried out, the drainage of the City can never be assured. The exact cost of the proposed scheme has not as yet been ascertained—detailed estimates are in course of preparation—but I believe I am well within the mark when I place it at Rs. 2,00,000.

20. That everything that could be done to provide for the sanitation of the City and Station has not been done I am fully conscious; but I contend that all has been done that could be done with the funds at the disposal of the Municipality. The correspondence which I submit with this letter will shew you that efforts have not been wanting on my part to obtain assistance from Government. I am aware that objection is taken to the employment of any portion of the Imperial revenue for purely local purposes; but, having regard to the peculiar circumstances of this Station, I cannot but think there are valid grounds for establishing in its favour an exception to the general rule. It is a station which only of late years has grown into importance; large sums have been expended in buildings and barracks for European soldiers; and, unless adequate provision is made for sanitation, this immense expenditure may have to be abandoned: out of local funds no adequate provision can be made.

This consideration will, I trust, move the Committee to recommend that State assistance should be afforded to the Municipality which may enable it to take in hand and carry out such works as are essential to secure, as far as practicable, the healthiness of this important Station.

21. There is one other matter on which, as being pertinent to your enquiry, I venture to address you.

Whatever arrangements now exist, or hereafter may be made, for the sanitation of the City and Station, it is impossible that they can be relied on for efficient working, unless they are constantly supervised by the executive officers.

22. The Magistrate and Collector of Allahabad has charge, not only of a district second in inhabited area to none in the North-Western-Provinces, but of a city and station which is the largest centre of European population in India, with the exception of the Presidency towns, and, perhaps, Kurrachee. For the performance of the whole magisterial and executive work of the District and Station, he has a staff of subordinate officers not more numerous than that which is assigned to much smaller districts, and districts which contain within their limits no station of the size and importance of Allahabad.

My experience has demonstrated to me that this staff is totally inadequate for the efficient performance of the duties they are required to discharge.

23. I have spared neither pains nor health, and I have received from my subordinate officers all the assistance that was in their power to render, yet I confess I have found it impossible to give to the concerns of this Station that constant and unceasing supervision which I am persuaded is indispensable, without neglecting in some measure my duties to the district.

24. The necessity for an increase in the executive staff has been brought to the notice of Government, but the exigencies of the public service elsewhere have prevented the additional assistance which has been applied for, both by me and by my predecessor, being granted.

25. If I may venture to express an opinion, I would suggest that the Magistrate of the District should be relieved of all but a general supervision over the City and Station, and that a second Joint Magistrate should be appointed, to whom the chief executive charge of the City and Station should be especially entrusted.

26. In conclusion, I have only to add that I am ready to afford you all the assistance in my power in elucidating the matter into which the Committee are enquiring; and I trust you will be satisfied that the Municipality and the executive officers of the district have doneall that, within the means at their disposal, it was practicable for them to do.

I have, &c.,

J. C. ROBERTSON,

Offg. Magistrate and President Municipal Committee.

K. 1.

Statement shewing the Cost of Conservancy Establishment, Drainage, Plant, &c., from 1st January to 31st December, 1867.

Months.	Civil Station.						City and Bazars.					
	Purchase and Feed of Cattle.	Cost of Sweepers, Drivers, &c., &c.	Purchase and Repairs of Carts, &c.	Cost of Latrines, Pans, Buckets, Scerkie, Privies, &c.	Cost of Drains, Culverts, &c.	Total.	Purchase and Feed of Cattle.	Cost of Sweepers, Drivers, &c., &c.	Purchase and Repairs of Carts, &c.	Cost of Latrines, Pans, Buckets, Scerkie, Privies, &c.	Cost of Drains, Culverts, &c.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
January, ...	198 0 1	139 0 0	88 0 0	...	...	425 0 1	...	148 0 0	...	...	5 0 0	153 0 0
February, ...	196 6 0	163 5 6	...	...	...	359 11 6	...	143 0 0	...	...	...	143 0 0
March, ...	179 8 3	173 8 9	18 9 6	...	...	371 10 6	...	133 0 0	...	...	...	133 0 0
April, ...	...	172 0 0	12 8 0	...	...	184 8 0	...	133 0 0	...	...	...	133 0 0
May, ...	255 12 0	163 1 6	145 14 0	...	...	564 11 6	...	133 0 0	...	...	...	133 0 0
June, ...	121 11 7	179 11 8	218 0 0	...	227 14 3	747 5 6	...	137 11 10	...	...	80 0 0	217 11 10
July, ...	358 12 9	159 0 0	70 0 0	996 9 11	86 13 3	1,669 3 11	...	144 0 0	...	...	...	144 0 0
August, ...	132 6 1	182 11 10	59 0 0	...	50 0 0	442 1 11	...	170 12 2	400 0 0	300 0 0	...	170 12 2
September, ...	1,171 9 3	193 8 0	...	281 3 9	100 0 0	676 5 0	4 9 11	189 8 9	165 0 0	1,843 10 8	1,250 0 0	3,452 13 4
October, ...	35 2 3	198 10 1	...	246 3 0	...	479 15 4	118 2 0	188 0 0	692 8 0	395 13 8	375 15 4	1,770 7 0
November, ...	42 7 5	205 7 6	...	708 15 3	...	956 14 2	14 14 6	201 4 8	218 10 2	...	88 3 1	523 0 5
December, ...	41 0 0	210 0 0	...	...	...	251 0 0	37 8 6	239 0 0	...	...	720 0 0	996 8 6
Total, ... Rs.	1,662 11 8	2,138 0 10	609 15 6	2,232 15 11	464 11 6	7,108 7 5	175 2 11	1,960 5 5	1,476 2 2	2,539 8 4	2,519 2 5	8,670 5 3

K. 2.

Statement shewing the Cost of Conservancy Establishment, Drainage, Plant, &c., from 1st January to 31st December, 1868.

Months.	Civil Station.						City.					
	Purchase and Feed of Cattle, &c.	Cost of Sweepers, Drivers, &c.	Purchase and Repairs of Carts.	Cost of Latrines, Pans Buckets, Seerkie, Privies, &c.	Cost of Drains, Culverts, &c.	Total.	Purchase and Feed of Cattle.	Cost of Sweepers, Drivers, &c.	Purchase and Repairs of Carts, &c.	Cost of Latrines, Pans, Buckets, Seerkie, Privies, &c.	Cost of Drains, Culverts, &c.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
January, ...	172 5 4	210 0 0	100 0 0	7 8 0	125 15 5	615 12 9	76 9 4	248 0 0	70 0 0	...	300 0 0	694 9 4
February, ...	218 5 0	210 0 0	60 0 0	4 11 0	199 3 4	692 3 4	97 0 0	315 0 0	950 0 0	...	318 7 9	1,680 7 9
March, ...	333 8 3	210 0 0	45 0 0	...	...	588 8 3	95 3 6	1,190 0 0	15 0 0	15 0 0	899 11 6	2,214 15 0
April, ...	315 4 6	475 12 6	419 0 0	...	...	1,210 1 0	46 2 10	274 0 0	184 8 0	215 15 0	2,142 0 0	2,862 9 10
May, ...	271 6 7	398 0 0	135 0 0	...	...	804 6 7	38 9 6	1,153 8 0	454 0 0	50 0 0	2,200 0 0	3,896 1 6
June, ...	171 14 7	366 13 8	136 3 6	34 6 0	9 0 6	718 6 3	98 15 9	743 6 0	307 0 6	...	1,487 4 0	2,636 10 3
July, ...	393 6 11	521 12 0	105 0 0	...	100 6 6	1,120 9 5	17 8 0	453 8 9	94 6 0	100 0 0	904 2 1	1,569 8 10
August, ...	264 2 2	394 6 6	105 0 0	...	249 11 6	1,013 4 2	116 9 8	1,062 10 0	129 0 6	...	400 0 0	1,708 4 2
September, ...	47 9 8	409 15 4	2,105 0 0	...	98 4 0	2660 13 0	97 0 0	751 12 7	623 0 9	240 6 9	2,162 10 10	3,875 7 2
October, ...	187 2 8	451 0 0	120 12 0	...	69 12 0	828 10 8	134 8 6	768 13 0	265 0 0	172 0 0	210 9 3	1,550 14 9
November, ...	284 7 8	470 15 0	120 12 0	...	...	796 2 8	139 3 8	791 1 1	2,505 0 0	1,229 4 0	...	4,664 8 9
December, ...	329 0 1	593 4 0	333 12 0	65 11 0	...	1,321 11 1	128 2 0	784 6 0	120 12 0	88 11 4	...	1,121 15 4
Total, ... Rs.	2,908 9 5	4,711 15 0	3,785 7 6	112 4 0	852 5 3	12,370 9 2	1,085 8 9	8,536 1 5	5,718 4 0	2,111 5 1	11,024 13 5	28,476 0 8

K. 3.

Statement shewing the Cost of Conservancy Establishments, Drainage, Plant, &c., from 1st January to 31st July, 1869.

Months.	Civil Station.						City.					
	Purchase and Feed of Cattle.	Cost of Sweepers, Drivers, &c.	Purchase and Repairs of Carts.	Cost of Latrines, Pans, Buckets, Seerkie, Privies, &c.	Cost of Drains, Culverts, &c.	Total.	Purchase and Feed of Cattle.	Cost of Sweepers, Drivers, &c.	Purchase and Repairs of Carts.	Cost of Latrines, Pans, Buckets, Seerkee, Privies, &c.	Cost of Drains, Culverts, &c.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
January, ...	259 14 0	285 0 0	136 0 0	...	175 0 0	855 14 0	163 15 3	804 14 4	236 0 0	1,000 0 0	...	2,208 13 7
February, ...	260 6 4	435 0 0	136 0 0	...	...	831 6 4	220 3 7	860 11 4	200 0 0	200 0 0	...	1,480 14 11
March, ...	97 10 3	442 9 6	256 0 0	...	...	796 3 9	202 13 3	817 8 0	320 5 4	545 14 0	281 9 4	2,168 1 11
April, ...	263 7 4	435 15 0	146 8 0	...	...	845 14 4	...	949 11 4	200 0 0	1,266 4 6	...	2,415 15 10
May, ...	413 8 8	417 5 4	282 2 0	...	200 0 0	1,313 0 0	376 3 8	890 8 6	300 0 0	1,000 0 0	...	2,566 12 2
June, ...	234 13 11	597 1 0	30 0 0	108 8 0	33 2 2	1,003 9 1	204 8 3	880 8 6	39 0 0	1,145 13 9	...	2,269 14 6
July, ...	251 9 4	580 4 0	206 0 0	160 0 0	...	1,197 13 4	130 11 2	883 5 4	217 0 0	448 12 9	265 11 11	2,005 9 2
Total, ... Rs.	1,781 5 10	3,193 2 10	1,192 10 0	268 8 0	408 2 2	6,843 12 10	1,358 7 2	6,091 3 4	1,512 5 4	5,606 13 0	547 5 3	15,116 2 1

ABSTRACT.

	Spent on Civil Station.	Spent on City.	Difference.	Total Spent on each year.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1867, ...	7,108 7 5	8,670 5 3	1,561 13 10	15,778 12 8
1868, ...	12,370 9 2	28,476 0 8	16,105 7 6	40,846 9 10
1869 (7 months), ...	6,843 12 10	15,116 2 1	8,272 5 3	21,959 14 11
Total, ... Rs.	26,322 13 5	52,262 8 0	25,939 10 7	78,585 5 5

L.

Detailed Statement shewing the Annual Receipts and Disbursements of the Allahabad Municipality from 1st January, 1867, to 31st July, 1869.

	Details.	January to December, 1867.	January to December, 1868.	January to July, 1869.
		Rs. As. P.	Rs. As. P.	Rs. As. P.
	Balance, ...	8,429 6 5	22,405 8 9	2,983 13 4
	Receipts.			
I.	Local Cesses, ...	30,259 10 8	75,837 1 1	29,026 13 8
II.	Interest on Government Securities, ...	...	600 0 0	600 0 0
III.	Contribution from Government, ...	316 4 0	800 0 0	7,791 12 11
IV.	Do. from Private Persons,... ...	...	...	...
V.	Collections from Land, Houses, &c., ...	28,459 13 4	34,352 9 0	20,961 13 1
VI.	Miscellaneous, ...	2,591 5 6	3,716 3 7	2,060 13 6
VII.	Transfer, ...	2,508 15 0	4,695 13 0	6,840 0 0
	Total Receipts, ...	64,136 0 6	1,20,001 9 8	67,281 5 2
	Grand Total, ... Rs.	72,565 6 11	1,42,406 2 5	70,265 2 6
	Charges.			
I. (*a*)	Collection, ...	5,855 8 0	10,877 6 4	5,298 5 4
I. (*b*1)	Establishment, ...	1,092 12 0	3,285 2 10	3,153 15 3
I. (*b*2)	Other charges, ...	236 1 5	750 6 6	344 8 8
II.	Public Works, ...	22,621 12 3	51,008 10 6	17,479 3 2
III.	Police, ...	505 3 9	17,846 7 9	5,224 15 3
IV.	Education, ...	...	1,000 0 0	...
V.	Hospitals and Dispensaries, ...	900 0 0	1,300 0 0	1,900 0 0
VI.	Conservancy and Lighting, ...	13,022 8 0	35,500 8 5	22,773 5 0
VII.	Miscellaneous, ...	2,085 8 9	2,928 5 0	1,693 3 1
VIII.	Special Objects, *viz.*, Gardens, &c., ...	3,840 8 0	12,970 5 9	6,757 0 0
IX.	Transfer (Cantonment Road Watering), ...	...	1,955 0 0	1,683 0 0
	Total Charges, ...	50,159 14 2	1,39,422 5 1	66,307 7 9
	Balance, ...	22,405 8 9	2,983 13 4	3,957 10 9
	Grand Total, Rs.	72,565 6 11	1,42,406 2 5	70,265 2 6

NOTE.—In addition to the sums shewn as expended on conservancy PROPER, the heading "Public Works" contains the charges for latrines, drains, &c., *vide* Statement K.

M.

Conservancy Establishment of the Allahabad Municipality.

	Details.	1st January, 1867.	31st July, 1869.
1	European Inspector, ...	...	1
2	Assistant do., do.,...	...	1
3	Jemadars, ...	1	13
4	Chuprassees, ...	...	6
5	Drivers, ...	15	52
6	Sweepers for public latrines, drains, roads, &c., ...	18	267
	Total, ...	* 34	340
	Gow-Khana.		
	16 Large buckets for liquid manure, ...	...	16
1	Draught-cattle, ...	31	64
2	Conservancy carts, ...	20	64
3	Watering ditto, ...	...	2
4	Hand-barrows for narrow lanes, ...	...	10
	Workshop for Repairs and Construction.		
	Mistrees, ...	...	3
	Carpenters, ...	...	5
	Wheel-greaser, ...	...	1

* This detail was chiefly for Civil Station, while the City nightsoil was removed by carts hired for the purpose according to requirement.

NOTE.—Besides the above details, extra staff are employed temporarily, during the rains, to cut away rank vegetation, clean drains, &c.

Extract from Budget Letter dated 15th November, 1868, forwarded to the Commissioner of Division, for submission to Government.

"*Original Works.*—Rs. 33,000 have been allotted for 1869-70.

"It is true that there were Rs. 43,000 allotted for the current year, but that was due to the fact of there being a large actual balance of Rs. 13,589 available on 1st April, 1868. No more than Rs. 33,000 can be afforded for these works, as the conservancy arrangements require strengthening to the extent of Rs. 6,726 increase on present year's Budget, in addition to the latrines, which will absorb Rs. 6,000 of this sum.

"As regards drainage works for the City, I am to observe that the Municipal Commissioners deem it very desirable that they should be commenced without delay, and that comment on their necessity is needless; and as His Honor the Lieutenant-Governor is fully alive to their vast importance, the Commissioners earnestly trust, when you receive a proper estimate of these works, which will be submitted as soon as possible, that you will move the Government to grant the loan named in Resolution II. of the proceedings herewith annexed :—

"'II.—Resolved unanimously—That as there are roads, bridges, conservancy and other works required, which will absorb the above-named sum, the cost of the drainage works of the City be excluded from this estimate. But, on the other hand, as drainage works are of the highest importance, and as it is very desirable that these works should be begun and completed without any delay, a supplementary estimate should be made out as soon as possible, and the sanction of Government solicited for raising a municipal loan on the security of a portion of 'Local Cesses' or 'Collection from Land, Houses, &c.,' as may be deemed most expedient, and repayable by annual instalments.'

"'V.—Resolved unanimously—That these establishments be amalgamated and placed under the charge of an Inspector on Rs. 100 per mensem, and placed on such a footing as will meet the growing wants of this portion of the Settlement.'

Purchase and Repairs of Conservancy Carts.—A provision, as shewn, has to be made for these, as the old-pattern wooden carts proved very troublesome, so much so, that it now costs the Municipality a contract price of Rs. 5-4-0 each per mensem to keep them in working-order. The Commissioners, therefore, deem it better to replace them by *iron* carts of a solid and durable pattern. Besides these, it was found necessary to get *hand-barrows* made, so as to enable the sweepers to convey the night-soil out of the narrow lanes in the City where carts could not pass. Twenty new carts are being provided for this year, and twenty more are now proposed to be purchased next year."

Extract from Letter No. 8B., dated 18th April, 1869, forwarding revised Budget-estimates for 1869-70 to Commissioner, Allahabad Division, for submission to Government.

"*Original Works.*—In consequence of there being a large disposable balance at the beginning of the year 1868-69, the Committee were enabled to set aside Rs. 43,000 for these; but in consequence of the great reductions of revenue which have since occurred, and the uncertainty of the future, the Committee feel themselves unable to allot more than Rs. 33,000 for the year 1869-70, though very much more is urgently required, more especially as they feel it incumbent on them to strengthen the provision for conservancy works and establishments in preference to works of general utility.

"The drainage of the City is a work which requires urgent and immediate attention, and the Committee deeply regret that their prese nt means will only permit of Rs. 10,000 being devoted to that purpose this incoming year.

"The Municipality are powerless to do more, unless Government see fit to interpose by releasing the Commissioner from the payment of the police, or some other equally efficacious measure, such as a loan, sanction for which has already been solicited.

"*VI. Conservancy and Lighting.*—The establishments for conservancy proper, as detailed, are absolutely necessary, and could not be reduced without impairing their efficiency, and imperilling the general health of the City and suburbs.

"*Establishment for Repairs to Carts.*—When the carts were fewer in number than they are at present, a contract was entered into by the Municipality with Mr. T. Crowley, to keep them in repair at a cost of Rs. 5-4-0 each per mensem. There are now sixty-four carts in use, which, at the contract rate, gives a monthly cost of Rs. 336, or Rs. 4,032 per annum. This was felt to be too heavy. The Committee, therefore, resolved some time since to have an establishment of its own for repairs, the estimated cost of which would be Rs. 1,454 per annum, thereby effecting a saving of Rs. 2,578. This arrangement takes effect from 29th April, 1869. The ten new conservancy carts now shewn on the estimates are urgently required by the extension of the Civil Station, and to strengthen the City arrangements; but they are probably the last which will be constructed by contract, as the Committee trust to be in a position to make their own for the future."

No 30B., dated Allahabad, the 15th May, 1869.

From—J. C. ROBERTSON ESQ., *President, Allahabad Municipality,*

To—M. H. COURT, ESQ., *Commissioner, Allahabad Division.*

SIR,—With reference to your No. 22, dated 15th November, 1869, and previous correspondence, I have the honour to inform you, that in my opinion a system of sewers for the City of Allahabad is not to be recommended until a proper supply of water can be obtained either by canals or other sources. I would, therefore, recommend that only saucer-drains should be laid down in all the main streets, and that the small lanes should be paved, with a drain at the sides, as is now being tried in Ihyapore.

2. I confess, however, my inability to estimate with any accuracy the cost of draining the City, or the detailed manner in which it should be done. Though the slope towards the Jumna is comparatively easy, that towards the railway presents great difficulties, and I certainly am in doubt if anyone but a thoroughly trained engineer is competent to draw up a really reliable scheme for draining the whole of the City. I imagine that it will be found necessary to make other sluice-gates on the Jumna and Ganges, but of course this is a matter for an engineer to determine. I have given all my attention to improving the state of the City as far as cleanliness is concerned, and think that there is very little doubt that the byelanes, &c., are cleaner now than they used to be. I should above all things like to see a thoroughly good system of drainage introduced, and hope that an officer may be appointed for this special purpose.

J. C. ROBERTSON,
President.

No. 2670, dated 7th June, 1869.

From—Col. C. J. Hodgson, R.E., *Secretary to Government, N.-W. P. P. W. D.*,

To—M. H. Court, Esq., *Commissioner, Allahabad Division.*

His No. 121, dated 20th ultimo.—In reply to Commissioner's remark that the Municipal Committee have not available the skill of an engineer to draw up a project, and recommendation that a special officer be appointed for this purpose, observes that the Government has no officer to depute for this purpose. The Municipality has now an engineer to whom they pay Rs. 400 per mensem, and they have for one of their members the Superintending Engineer of the 3rd Circle, Department Public Works.

2. The City has been completely surveyed, it is believed, and some part of it, at all events, levelled. The Superintending Engineer cannot, of course, devote much time to elaborating a scheme of drainage; but, under his general directions, the Municipal Engineer, aided by one or two Native surveyors, should, it is considered, be able to at least obtain all the data required for working out a scheme of drainage.

3. Under any circumstances, His Honor the Lieutenant-Governor is of opinion that the drainage works to be projected should be for rain-water only, and that all sewerage-matter should be collected. Possibly, if canal-water should become available, means may be devised of carrying away the sewage by the force of water to some collecting-ground, where it may be separated of its waters, and then may be allowed to escape to the river without causing pollution of it. But this would be entirely independent of the rain-water drains, which, as a rule, should not be combined with the sewers.

4. Small channels would suffice for the sewage and the requisite flushing water, whereas closed drains for carrying off the rain-fall must be very large, and this may all pass off surface-drains at small cost. Therefore, the drainage works which the Municipal Committee should be now executing may be considered to be quite permanent works, and should be carried out on a properly matured scheme.

5. It seems likely that a sluice through the railway dock wall, to allow of escape of rain-water to the Jumna, would be of great use; but at the present time negociations are believed to be in progress with the Railway Company in regard to the surrender of all their works at their present river terminus, and, until these are settled, it would not be expedient, it is thought, to make any attempt to get possession of the dock in question.

C. J. HODGSON, Col., R.E.

No. 77 of 1869.

Copy forwarded with reference to his No. 30B., dated 15th May, by Commissioner to Municipal President.

M. H. COURT,
Commissioner.

No. 102B., dated Allahabad, 25th August, 1869.

From—J. C. Robertson, Esq., *President, Allahabad Municipality,*

To—M. H. Court, Esq., *Commissioner, Allahabad Division.*

Sir,—With reference to your No. 77, dated 14th June, and the Secretary to Government, Public Works Department's, No. 2670, dated 7th June, I have the

honour to submit a map shewing the line of drainage proposed by the Municipal Engineer for the City, and approved by the Superintending Engineer, Colonel H. Rose, who has carefully gone over the plan, and by the Municipal Committee to whom it was submitted yesterday morning.

2. Colonel Rose is of opinion that until some arrangement can be come to as regards the railway dock, it will be necessary to postpone any further measures in that quarter, in which I fully concur with him, as I do not see how any other arrangement can be made; and if this scheme is sanctioned by Government, the other parts of the City will so fully occupy the time of the Municipal Engineer that it will be impossible to do much to Kydgunge at present.

3. I have ordered the Engineer to send in detailed estimates, with measurements, &c., the preparation of which will, of course, take some time; but in the meantime I send on this plan, in case you or the Government wish to issue any further instructions.

4. The arrows on the map shew the proposed outfalls; it is proposed to metal all wide roads and have saucer-drains at the sides, and in narrow streets, where wheeled traffic cannot go, to have the whole width of the road paved with stone, with a drain at the side according to the accompanying drawing. This has been tried by me in one or two narrow lanes, which, from being filthy, have become clean and neat. I do not think it is any use to make saucer-drains unless the road is metalled, and I certainly am very much in favour of those pavements for lanes.

5. In the suburb of Daragunge, which, as you are aware, is on a ridge, and is composed of one main road with several little lanes running into and from it, or else going down the other side of the ridge towards the river, the Committee are now constructing a drain, and have sanctioned the paving of one lane as an experiment. If this answers, as I have no doubt but that it will, I should like to see every lane paved. It is from its position eminently suited for drainage, and I believe that the whole of it could be done at a cost of Rs. 15,000.

6. Of course, unless aided by a loan from Government, or otherwise, it will be impossible for the Committee to carry out their proposed scheme. It is, however, premature to refer to that until the estimates are made out. I regret that there has been so much delay in sending in this report, but this was partly caused by the extreme heat for some time rendering it impossible for the Engineer to get on with his out-door work.

J. C. ROBERTSON,
President.

Extract from Letter No. 109 of 1869, dated 17th May, 1869, from DR. C. PLANCK, *Sanitary Commissioner, North-Western Provinces, to* R. SIMSON, ESQ., *Secretary to Government, North-Western Provinces.*

SIR,—I have the honour to report that I inspected Kuttra Bazaar at Allahabad this morning.

2. It was found, as a rule, remarkably clean and well kept—its conservancy efficiently managed; but the existence of nuisances dangerous to health are by no means wanting, and I desire to draw attention to the two existing circumstances described below, which urgently call for remedy.

3. The part of Kuttra which adjoins the Magistrate's compound to the west, and faces the residence of the Superintendent of the Government Press to the north, is a butcher's quarter, and in the back yards of the houses there, sheep and goats

are slaughtered daily, and the resulting impurities are thrown into any convenient excavation, or left to dry up where the animals are slaughtered; and the skins of the animals are spread out to dry, after being scraped and otherwise prepared, to make inferior leather. The result is a condition of atmosphere prejudicial to health which nothing, short of forbidding the slaughter of animals within the limits of Kuttra, will remedy.

C. PLANCK,
Sanitary Commissioner.

No. 162, dated Allahabad, 17th June, 1869.

From—J. C. ROBERTSON, ESQ., *Officiating Magistrate, Allahabad,*

To—M. H. COURT, ESQ., *Commissioner, Allahabad Division.*

SIR,—In reply to your No. 98, dated 16th instant, calling for reports regarding sanitation in the Kuttra Bazaar, I have the honour to inform you that I will lay Dr. Planck's letter before the Municipal Committee, but wish to bring to your notice that, previous to Dr. Planck's visit of inspection, I had myself ordered the removal of the slaughter-houses, which are now located at some distance from the bazaars.

J. C. ROBERTSON,
Officiating Magistrate.

No. 116, dated Allahabad, 19th April, 1869.

From—J. C. ROBERTSON, ESQ., *Offg. Collr., and Pres. Municipal Comttee., Allahabad,*

To—M. H. COURT, ESQ., *Commissioner, 4th Division, Allahabad.*

SIR,—It has for some time been evident to me, as President of the Municipal Committee, that the funds available are not sufficient to enable this large and increasing Station to be laid out in the manner in which it should be done. Since the orders of the Government of India amending the rules regarding the laying of octroi, the receipts of the Municipality have not been sufficient to meet the ordinary demands upon them, the yearly receipts having been reduced by Rs. 30,000.

2. Up to the 31st March, besides other items of smaller amounts, there are two now outstanding, *viz.*,—

Instalment of Loan for Road and Ferry Fund Reserve, ...	Rs.	2,500
And four months pay of Police, ...		6,052
Total, ...	Rs.	8,552

which I have not any hope of clearing off, unless immense reductions are made, which would render the Municipality almost useless.

3. The Committee are trying by increased taxation to improve their position, but very little can be done in this manner; and even if it were possible to find ourselves in the same position as before, I am not at all prepared to say that our position would be a flourishing one.

4. To anyone who has resided for some years in this Station it is evident, from the rapidity with which it is increasing on all sides, that increased expenditure will be necessary in all branches, and especially in the very important one of conservancy. In the past year, the charges are over Rs. 20,000 per annum in

excess of the previous year; but I am perfectly certain, that to ensure thoroughly good conservancy arrangements over the City and Station we shall in a very short time have to spend as much again.

5. Setting aside original works even of such importance as schools, &c., to which a municipality is bound to contribute, another very heavy charge occurs, and must of necessity fall heavier every year. As houses are built, it will be necessary to make roads, and at the present moment several very important ones are stopped from want of funds.

6. The two items of conservancy and roads may be taken as those in which the Government has most direct interest, and I think that, taking into consideration the increased expenditure which is entailed upon us in the first from the presence of the Government offices, and the wear-and-tear caused to the second by conveyance of Government stores and troops, it is only fair that we should look to Government to help us, more especially since the occupation of the New Barracks, between which and the Fort,* a gun-carriage agency, all traffic will be over municipal roads.

7. It is true that we do receive aid to the extent of Rs. 5,105, surplus from confiscated lands, and Rs. 641 surplus from nuzool, but this only represents a portion of the expense caused to the Municipality by Government, and is in reality no contribution at all, being the surplus after realization of the Government demand.

8. I believe that at Lahore, when the Municipality was in a similar strait, the lands within their boundaries were given to them as a jagheer, and I would now propose that the same should be done here. If it was necessary to aid a comparatively small station like Lahore, the argument applies much more strongly in the case of this Station, the largest in India after a Presidency town, and one in which, being new, great expenditure is necessary in order to render it worthy of the importance attached to it by Government.

9. Besides the Station there is the City, increasing in proportion and needing improvements in the way of drainage, &c., of which, though the necessity is obvious, it is impossible to commence any work on a large scale, owing to want of funds.

10. The net amount of revenue in the year, after paying Rs. 1,677 on account of maâfeedar's rights to Rajah of Jyepore, amounts to Rs. 26,594, as per annexed detail:—

1.	Paid by zemindars, ...	Rs.	17,127	0	0
2.	Revenue from Confiscated land, ...	„	5,777	0	0
3.	Ditto, Nuzool, ...	„	619	0	0
4.	Paid by Military Department in lieu of Fort lands,	„	2,566	0	0
5.	Taken up by Government for public purposes, ...	„	503	0	0

The items marked 4 and 5 need not be taken into consideration, as the former will probably be excluded from assessment at the settlement, and the latter is only temporary, being revenue derived from land taken up by Government for public purposes, but not yet given over. The actual revenue, therefore, of these lands is Rs. 23,525, which I trust I am not unreasonable in hoping that the Government will consent to give as a jagheer to the Municipality.

11. Should this grant be made, the receipts of the Municipality will still be less than was the case before Government Order No. 4441, dated 6th November, 1868, and as it is, I think, undeniable that our expenses tend to increase year by year, I would further propose that, in accordance with paragraph 24 of the above-named

* (See in original.)

resolution, the cost of the police, amounting to Rs. 1,513 per mensem, be borne by Government. It may be said that my demands are excessive, but, after carefully thinking over the matter, I have come to the conclusion that our urgent need justifies the demands; and as regards the police, I hope that the order may be retrospective, so as to pay off the Rs. 6,052 now standing against us.

I have, &c.,

J. C. ROBERTSON,
Offg. Collr. and Pres. Municipal Comtee.

No. 662, dated Allahabad, 13th December, 1864.

From—*The* EXECUTIVE ENGINEER, *II. Allahabad Division, Public Works,*

To—*The* JOINT MAGISTRATE, *Allahabad.*

SIR,—Having received instructions to proceed with operations on the New Cantonment of Allahabad, in the practical shape of a grant of four lakhs for expenditure during the current official year, it becomes necessary for me without delay to bring materials to site, erect lime-kilns, lay down tramways, &c., &c. The ground for the above has not yet been formally transferred to this department. On application some time ago to Mr. Ricketts as to any objections existing against certain lines of road being marked out, that officer requested me to do as little damage as possible in such operations, as the question of compensation might be thereby complicated.

2. As operations will now gradually be extended, it may not be in my power to meet Mr. R.'s wishes in this matter, and I would suggest the formal transfer of the land to this department at as early a date as practicable.

I have, &c.,

DAVID LIMOND, CAPTAIN, R.E.,
Ex. Engr., II. Allahabad Div., Pub. Works.

No. 319, dated 16th December, 1864.

From—G. RICKETTS, ESQ., *Collector of Allahabad,*

To—CAPTAIN LIMOND, *Executive Engineer.*

SIR,—In reply to your letter No. 662, of 13th instant, I have the honour to inform you that I have issued orders for the immediate transfer of the land in question.

I have, &c.,

G. RICKETTS,
Collector.

Translation of a Vernacular Proceeding, dated the 16th December, 1864, issued by order of MR. THORNHILL, *Collector, to* SIRAJ-OOD-DEEN, *Tehseeldar of Chail.*

CAPTAIN LIMOND, in his letter No. 662, dated 13th December, 1864, says that an order has been passed for building a new Cantonment at Allahabad, and four lakhs of rupees have been sanctioned for the present year, and that he is going without further delay to collect the materials, construct a kiln for burning lime, mark down a line of road, &c.; but the land for this purpose has not been formally pointed out to him.

You are, under the proceeding of to-day's date, ordered to put the District Engineer immediately in possession of the new land, and submit the war-

rant of possession, together with the formal papers, and the razeenamah of the zemindars.

You are also ordered not to press the zemindars for the December instalment, but should receive the same as they wish to pay.

REPORT.

IN reply to the above purwanah, begs to state that, conformably to the orders, Data Sehai, mohurrir, was deputed to put the District Engineer in possession of the land for the New Cantonment, and he put the said officer in possession of mouzah Munohurpore, &c., and told him that all the houses and trees (situate in the villages named below) north of the railway line to the bank of the Ganges have been counted, and the land measured, and the compensation will be determined. He should proceed with the work, and, accordingly, the houses in Poora Sheoumber Lall (in Bhawapore Circle), Moohyoodeenpore, and Poora Munohur, have been pulled down, and in many houses bricks and other materials are collected. Respecting the warrant of possession, the said officer says that he will write a letter to the Collector.

That the compensation papers will soon be prepared and submitted.

List of the Villages.

Seraie Saleem.	Raipore.
Rajrooppore.	Chandmaree Raipore.
Bagh Sipehdar Khan.	Chuck Rajah *alias* Cazeepore.
Arazee Sipehdargunge.	Assudoollahpore Mohamedabad.
Chuck Kurnam Gir.	Mow.
Bhawapore.	Chandmaree Mow.
Munohurpore.	Dabee Puttee.
Chandmaree Munohurpore.	Jote Kustooree.
Moheeoodeenpore.	Chandmaree Seraie Bhikhie.
Chuck Hidayet Hoosein.	Seraie Bhikhie.
Bagh Hoosein Beg.	Byjneepore.
Bagh Pechabund.	Bhikunpore.
Khuleelpore, *alias* Khwajgee Jote.	Chandmaree Oomeerpore Neewan.
Chuck Rajah Abdoonnabee.	Oommurpore Neewan.

SIRAJ-OOD-DEEN,
Tehseldar, Chail.

Dated 22nd March, 1865.

DATA SEHAI,
Compensation Mohurrir, Chail.

No. 1012, dated Allahabad, the 22nd July, 1865.

From—THE BRIGADE MAJOR, *Allahabad.*

To—THE MAGISTRATE AND COLLECTOR OF ALLAHABAD,

WHO is requested to inform the undersigned, with reference to the enclosed letter from Captain Limond, Executive Engineer, 2nd Allahabad Division, what steps have been taken to hand over the ground for the New Cantonments to the Military authorities; and if it is not likely to take place for some time, that he will be good enough to cause the nuisances complained of by Captain Limond being rectified.

By Order,
R. FELLOWES, CAPTAIN,
Major of Brigade.

No. 183, dated Allahabad, the 22nd July, 1865.

From—G. RICKETTS, ESQ., *Collector, Allahabad.*

To—CAPTAIN FELLOWS, *Brigade-Major.*

SIR,—In reply to your letter No. 1012, dated 22nd July, forwarding a letter from the Executive Engineer, regarding the New Cantonment lands, I have the honour to inform that possession of those lands was given to Captain Limond on 16th of last December, since which date the Civil authorities have nothing to say to them.

2. But perhaps I may be permitted to state, for the information of the Brigadier-General Commanding the Station, that he will find it equally profitable and far less trouble if he leases the land for grazing alone, and forbids cultivation. Then the land can be appropriated as required, without any compensation for standing crops. The Railway people lease all their spare land for grazing, and I have done the same myself, receiving within a trifle the same that I got when two crops were permitted to be raised. The cattle for the soldiers might be permitted to graze there, and a proclamation that the land was to be leased would bring many tenders.

G. RICKETTS.

The enclosure from Captain Limond is returned.—G. R.

Note.—In the copy of this letter received from the Officiating Deputy Assistant Quartermaster-General, Allahabad Division, on the 13th September, 1869, the following note, dated *1st September*, 1865, was found entered in the margin opposite the words "have nothing to say to them" at the end of paragraph 1 :—

"I should have said 'have nothing to say to the Revenue Collections,' but the Magisterial jurisdiction is as yet discharged."

"*September 1st*, 1865. (Signed) "G. RICKETTS."

No. 1959G., dated Allahabad, 4th September, 1869.

From—CAPTAIN L. A. GREGSON, *Officiating Deputy Assistant Quartermaster-General,*

To—The SECRETARY, SANITARY COMMITTEE, *Allahabad.*

SIR,—As requested, I have the honour to forward the accompanying copies of special reports* (3) received from the Superintending Surgeon-Major, British Troops, Allahabad, on the sanitary state of the New Cantonment and ground in its vicinity; as also one report† on the position of the Old Cantonment and New Barracks.

I have, &c.,

L. A. GREGSON, CAPTAIN,
Offg. Dy. Asst. Quartermaster-Genl.

* No. 134, dated 27th April, 1869, from Superintending Surgeon-Major, Allahabad Circle, to Deputy Assistant Quartermaster-General, Allahabad Division.
Memo. No. 250, dated 8th May, 1869, from ditto, ditto, to ditto, ditto.
Letter No. 251, dated 10th May, 1869, from ditto, ditto, to ditto, ditto.

† No. 145, dated 4th May, 1869, from Superintending Surgeon-Major, Allahabad, to Deputy Assistant Quartermaster-General, Allahabad Division.

No. 251, dated Allahabad, 10th May, 1869.

From—J. A. W. THOMPSON, ESQ., *Supdtg. Staff Surgeon-Major, British Troops,*

To—The OFFG. ASSISTANT QUARTERMASTER-GENERAL, *Allahabad Division.*

SIR,—I do myself the honour to bring to the notice of the Major-General Commanding, Allahabad, the imperfect manner in which the surface-filth has been cleared off in the New Cantonment, particularly to the rear of the barracks on the left flank.

I beg also to suggest that if it be found necessary to allow a certain number of Natives employed on the barracks to hut themselves in the neighbourhood, that some order and regularity should be enjoined on them. At present, these people seem able to act as they please.

The punkahs in the New Barracks are useless. They should be hung a foot lower, and they should be connected to each other by two ropes instead of one, so as to insure a steady displacement and agitation of the air. As they are now, they move about and are of no manner of use.

I have also observed that the tatties do not fit the doors accurately; also, that the punkah and tattie-coolies take the law into their own hands, and leave off pulling and watering for several hours, morning and evening. This should be put a stop to at once, but particularly so in the hospitals and married-quarters.

I have, &c.,

J. A. W. THOMPSON,

Supdtg. Staff Surgeon-Major, British Troops.

No. 250, dated Allahabad, 8th May, 1869.

From—J. A. W. THOMPSON, ESQ., *Supg. Surgeon-Major, H. M.'s British Forces,*

To—CAPT. L. A. GREGSON, *Offg. Dy. Asst. Quartermaster-Genl., Allahabad Division.*

THE groves of trees in front of and between the New Barracks on their right flank are by far too dense.

Two trees in three should at once be cut down.

The ablution-rooms in the New Barracks should have ridge-ventilation provided at once.

J. A. W. THOMPSON,

Superintending Surgeon-Major.

No. 134, dated Allahabad, the 27th April, 1869.

From—J. A. W. THOMPSON, ESQ., *Suptdg. Surgeon-Major, H. M's. British Troops.*

To—The DEPTY. ASST. QUARTERMASTER-GENERAL, *Allahabad Division.*

SIR,—As Superintending Surgeon-Major of British Troops, I am responsible for their sanitary condition; I therefore consider it my duty to represent the necessity there exists of at once removing the villages from that strip of land lying east of the New Cantonments, and extending from the right flank of the New Barracks to the Cawnpore Road. At present this land is under tillage, enriched by the filthiest of manures, and generally resorted to for purposes of nature, not alone by the villagers themselves, but by the great mass of workpeople.

In fact, this strip of land is now little better than a vast latrine, whereas it should at once be ploughed up, disinfected, fenced in, and turned into grass land.

I have, &c.,

J. A. W. THOMPSON,

Suptdg. Surgeon-Major, H. M.'s British Troops.

No. 145, dated Allahabad, 4th May, 1869.

From—J. A. W. THOMPSON, ESQ., *Suptdg. Staff Surgeon-Major, H. M.'s British Troops,*

To—The DEPTY. ASST. QUARTERMASTER-GENERAL, *Allahabad Division.*

SIR,—I consider the present Cantonments of Allahabad as unhealthy as any in India.

The peninsula on which the Cantonment stands is densely populated, crowded with cities, villages, and bazaars. In every direction filthy tanks abound, and the soil is saturated with the accumulated filth of centuries. In addition, at all seasons of the year, the place is overrun by vast crowds of squalid and diseased pilgrims. Sanitation is out of the question in such a locality.

In connection with the foregoing remarks, I beg to recommend the removal of all the European Troops to the New Barracks at the earliest possible date.

I feel convinced that cholera may break out again in the Old Barracks; and I feel equally certain that in the New Barracks, if but proper precautions be used, and sanitary regulations strictly attended to, the troops will have as fair a chance of health as those located in any other Cantonment in the Gangetic valley.

I have, &c.,

J. A. W. THOMPSON,

Suptdg. Staff Surgn.-Major, H. M.'s Brit. Troops.

Dated Allahabad, 27th April, 1869.

Proceedings of a Special Committee assembled at Allahabad on the 24th April, 1869, by order of Major-General P. Harris, Commanding, to report on the Sanitary State of the New Cantonments.

President—Colonel D. Reid, Royal Artillery.

Members.

Colonel C. J. Hodgson, R.E., Secretary to Government, N.-W. P.
Lieutenant-Colonel W. H. Stubbs, 4th Regiment N.I.

Attending the Committee.

Inspector-General of Hospitals C. B. Chalmers,
Surgeon-Major J. A. W. Thompson, Superintending Surgeon, and
Major Hanmer, Cantonment Magistrate.

The Committee assemble at the time and the place ordered; and, with reference to correspondence noted in margin, proceed to examine the ground all around and inside Barrack-square, and, after due inspection, cannot find there is anything in the present state of the Barracks to justify the idea being entertained that the late outbreak of cholera in No. 16 Barrack was caused by filthy state of the ground; for the Committee could find very little sign of dirt in any place, and near the barrack that was badly reported on, the ground appeared perfectly clean, and no bad odour could be preceived near any of the barracks; and the bad odour complained of by Dr. Catherwood (during easterly winds) must have arisen from filth in the nullahs to the north-east of the Barracks. But, as the ground is now being thoroughly cleaned, and measures taken for forcing the many coolies employed on the works to resort to latrines to answer the calls of nature, it will be impossible that any bad odour from the nullahs can ever again be complained of; and the Committee have no hesitation in stating that there is nothing against the Barracks being immediately occupied, and no better accommodation could possibly be imagined for troops than in the ranges of barracks to the west of the lines—having plenty of open space in front, and fine open land on the north and south sides.

'Brigade-Major, Allahabad, letter No. 101, of 23rd April, 1869.
A letter from Major Whitehead 58th Regiment, forwarding one from Staff-Surgeon Catherwood regarding cholera cases, dirty state of Lines, &c.

The written opinions of Inspector-General of Hospitals C. B. Chalmers, as well as of Staff-Surgeon J. A. W. Thompson, Superintending Surgeon, herewith annexed, with also a D. O. letter from Dr. Planck, Sanitary Commissioner, regarding the quality of the water that may be expected from the wells, tend to confirm

the Committee in the opinions they have expressed, that there can be no danger whatever in at once occupying the New Barracks, and all that will remain to make them thoroughly comfortable will be to finish roads (level the inequalities in ground), clear away the rubbish; and all this done, and a good and plentiful supply of drinking-water, as well as water for bath-rooms and tatties, laid on, then, no soldiers could be more comfortably housed in India than those who will occupy the New Barracks at Allahabad.

D. REID, COL., R.A., *President.*
C. J. HODGSON, COL., R.E.,
W. A. STUBBS, LIEUT.-COL., *4th Regt. N.I.*, } *Members.*

Dated Allahabad, 25th April, 1869.

I AM of opinion that the late outbreak of cholera in the detachment 58th Regiment, which took place on its occupying the New Barracks, cannot be directly attributed to the unsanitary state of the ground in their vicinity; and that, under all circumstances, it would be safer to re-occupy them, than to return to the Old Cantonments.

C. B. CHALMERS,
Deputy Inspector-General of Hospitals,
Member of Special Committee.

No. 129, Allahabad, 24th April, 1869.

From—J. A. W. THOMPSON, ESQ., M.D., *Suptdg. Staff Surgeon-Major British Troops,*

To—COLONEL REID, R.A., *President of Special Committee.*

SIR,—With reference to the Committee which assembled at the New Barracks this morning, of which you were President, and which I attended by order, I have the honour to state that, in my opinion, the ground is by no means in the filthy state it was represented, and that I could discover no filth between the Barracks, and not any great amonnt in the vicinity of the officers' quarters, so much complained of.

I am of opinion that if fifty sweepers and two hundred coolies be employed in sweeping and in cleaning the ground—not in levelling, or filling up, or road making—for three days, that the whole of the ground between and around the Barracks will be as clean or cleaner than barracks or their vicinity usually are in this country, and that no danger need be apprehended as far as surface-dirt is concerned, in the allowing the barracks to be occupied by British troops. I do not attribute the late virulent outbreak of cholera in the detachment of the 58th Regiment to the reported smell or dirt.

I have, &c.,

J. A. W. THOMPSON, M.D.,
Surgeon-Major British Troops.

Dated Allahabad, 26th April, 1869.

From—DR. T. PLANCK, *Sanitary Commissioner, N.-W. Provinces,*

To—COLONEL D. REID, R.A.

MY DEAR REID,—I cannot give you an opinion of any value concerning the water in the New Barrack wells at Cannington, because I have not examined it, nor can do any work of that kind in Cantonments, under recent orders.

But rest assured of this—if the wells are well constructed, the water in them will be very good, as the water of this tongue of land between the Ganges and Jumna is as sweet and good as any water in the world.

Yours, &c.,

T. PLANCK,

Sanitary Commr., N.-W. Provinces.

Extract from Brigade Orders by the Officer Commanding, No. 416, *dated Allahabad, 23rd April,* 1869.

A Special Committee, composed as under, will assemble at 5-30 A.M., on Saturday, the 24th instant, and subsequently, from time to time, as the President may appoint, at No. 16 Barrack, on the right of the rear line of the European Infantry Barracks, New Cantonment, to report upon matters which will be submitted to them by the Brigade-Major :—

President—Colonel D. Reid, Royal Artillery,

Colonel C. J. Hodgson, R.E., Secy. to Govt., N.-W.P. (by permission of Government, N.-W. Provinces), } *Members.*
Lieut.-Colonel W. H. Stubbs, 4th Regiment N. I., ... }

Deputy Inspector-General of Hospitals C. B. Chalmers, Staff Surgeon-Major J. A. W. Thompson, Superintending Surgeon-Major, and Major Hanmer, Cantonment Magistrate, are requested to attend.

By Order,

GEO. MARRINER, CAPTAIN,

Brigade-Major.

No. 101, dated Allahabad, 23rd April, 1869.

From—CAPTAIN GEORGE MARRINER, *Brigade-Major,*

To—COLONEL D. REID, R.A., *President of Special Committee, Allahabad.*

SIR,—With reference to Brigade Order No. 416 of this date, directing the assembly of a Special Committee, of which you are President, I have the honour to request the attention of the Committee may be given to the following points :—

1*st*,—A detachment 58th Regiment, 280 strong, which had been in cholera camp at Ghuddapore, and in which for thirteen days there had been no fresh case of cholera, occupied the New Infantry Barracks from Nos. 9 to 16 on the morning of the 17th instant. On the morning of the 19th instant, two cases of cholera were reported, and on the following day two more.

The detachment was moved out of the Barracks on the evening of the 20th to Jhoosie, since which there has been no fresh case of cholera.

2*nd*,—Annexed is a memo. from the officer commanding the detachment, forwarding a report from the officer in medical charge, in which the ground around the Barracks is stated to be in an extremely filthy state, caused by the habits of the large number of Native labourers who have been employed in the construction of the Barracks, for whom no sanitary precautions or arrangements for latrines of any kind appear to have been made.

3*rd*,—An opinion appears to prevail, particularly amongst those who have lived there, that to the state of the ground occupied by the Barracks the cholera is to be attributed, and that at present the Barracks are unfit for occupation.

4*th*,—An east wind prevailed on the 18th, 19th, and 20th, and on these dates, particularly at night, an offensive smell is reported to have arisen from the ground

5*th*,—I am directed to request you will take the evidence of Major Whitehead, commanding the detachment, and of the officer in medical charge, and from others who have lived there.

6*th*,—The Committee will be good enough to record their opinion whether the state of the ground round and about renders the Barracks, or any part of them, unfit for present occupation; and whether, should immediate occupation not be recommended, it would be advisable or otherwise to occupy them before the rains.

I have, &c.,
GEORGE MARRINER, CAPT.,
Brigade Major.

Dated Allahabad New Cantonments, 20th April, 1869.

From—MAJOR R. C. WHITEHEAD, *Commanding Detachment* 58*th Regiment,*

To—*The* BRIGADE-MAJOR, *Allahabad.*

HAS the honour to forward, for the information of the Major-General Commanding, the enclosed letter from the officer in medical charge of this detachment, reporting that four cases of cholera have occurred since the arrival of the detachment in the New Barracks; also that the ground in the vicinity of the Barracks is in a filthy state, owing to the number of Natives employed for a long period in the construction of the Barracks without any steps or precautions having been taken in the way of sanitary arrangements, such as latrines and filth-carts.

R. C. WHITEHEAD, MAJOR,
Commanding Detachment 58*th Regiment.*

Dated Allahabad New Cantonments the 20th April, 1869.

From—DR. CATHERWOOD, *Staff Asst. Surgeon in Med. Charge Detachment* 58*th Regt.*

To—*The* OFFICER COMMANDING *Detachment H. M.'s* 58*th Regt., New Cants., Allahabad.*

SIR,—I have the honour to report for your information that two fresh cases of cholera occurred last night, making four in all since the arrival of the detachment at these Barracks. I have the honour to bring before your notice the extremely filthy state of the ground occupied by the Barracks, caused by the habits of the large number of Native labourers who have been engaged for a long period in their construction.

I have, &c.,
WM. CATHERWOOD, M.D.,
Staff Asst. Surgeon in Med. Chge. Detacht. 58th Regt.

No. 102, dated Brigade Office, Allahabad, 29th April, 1869.

From—CAPTAIN GEORGE MARRINER, *Brigade-Major,*

To—COLONEL D. REID, R.A, *President of a Special Committee.*

SIR,—I am directed to return to you the enclosed proceedings of a Special Committee, of which you are President, and to request you will comply with the instructions contained in para. 5 of this office letter No. 101, dated 23rd instant, attached.

It must be borne in mind that the cases of cholera occurred on the 19th and 20th, while the Committee assembled on the 24th instant, between which dates very active measures were taken to cleanse the surrounding ground.

The Committee and the Superintending Surgeon-Major have recorded an opinion based on an inspection made on the 24th instant, that the filthy state of the ground did not cause the outbreak of cholera; and further, they report that the ground appeared perfectly clean.

The Major-General Commanding, therefore, in order that an impartial and correct opinion of what may or may not have been the true cause of the cholera in these Barracks may be arrived at by those to whom these proceedings will be referred, desires that the statement of Major Whitehead, 58th Regiment, and Assistant-Surgeon Catherwood, may be attached to these proceedings.

This letter to be returned therewith with the least possible delay.

I have, &c.,

GEORGE MARRINER, CAPTAIN,

Brigade-Major.

Dated Allahabad, 1st May, 1869.

From—COL. D. REID, *President Special Committee on Barracks at New Cantonments,*

To—*The* MAJOR OF BRIGADE, *Allahabad.*

HAS the honour to resubmit proceedings of Special Committee, having complied with Brigade Office letter No. 102, of 29th April, 1869. The report remains unaltered, but the written explanations of Major Whitehead and Dr. Catherwood are attached, as also a letter from Colonel Hodgson, R.E., regarding his opinion in the matter.

D. REID, COL., R.A.,

President of Special Committee.

Dated Chatham Lines, Allahabad, April 30th, 1869.

From—DR. W. M. A. CATHERWOOD, *Staff Assistant Surgeon,*

To—COL. D. REID, R.A., *President Special Committee, Allahabad.*

SIR,—In compliance with your memo., dated Allahabad, April 29th, 1869, I have the honour to report that at the time the New Barrrcks were occupied by a detachment, Her Majesty's 58th Regiment, the grounds on which the Barracks stood were, in my opinion, in a very filthy condition; this state being due, I believe, to the habits of the large number of Native labourers who were engaged for a long period in the construction of the Barracks.

I have, &c.,

W. M. A. CATHERWOOD, M.D.,

Staff Assistant Surgeon.

Dated Allahabad, 30th April, 1869.

From—MAJOR WHITEHEAD, *Commanding Detachment 58th Regiment,*

To—COL. D. REID, *President Station Committee.*

SIR,—In reply to your memo., dated 29th instant, I have the honour to state that, on my occupying the Barracks on the 17th instant, I found the ground generally (with the exception of the maidan in front of the lines, which was very clean, and the Royal Artillery Lines, which I did not inspect) very dirty from human excrement, and more particularly in low small nullahs running between the rear row of the men's barracks, and the officers' quarters, as also in a large piece of very broken ground across the road, to the right rear of the officers' quarters, from

which place a most offensive smell was wafted by an east wind, which continued for two days after our arrival. This was noticed by the other officers of my detachment.

On my attending the Committee on the 24th, I at once noticed that the ground was cleaner, although the low small nullahs in the vicinity of the officers' quarters had not been swept.

I have, &c.,

R. C. WHITEHEAD, MAJOR,
Comdg. Detachment 58th Regt.

Dated Allahabad, 1st May, 1869.

From—COLONEL C. J. HODGSON, R.E., *Member of the Committee,*

To—COLONEL D. REID, R.A., *President of Committee, &c., &c.*

SIR,—On reperusal of the Report of the Proceedings of the Committee of which you were President, assembled on the 24th ultimo, to report upon the state of the ground about the New European Infantry Barracks at this Station, in connection with written statements furnished to you by Major Whitehead and Doctor Catherwood, I have the honour to inform you that at the time of signing the report I failed, perhaps, to perceive the full scope of the following portion of the report:—"And, after due inspection cannot find that there is anything in the present state of the Barracks to justify the idea being entertained that the late outbreak of cholera in No. 16 barrack was caused by the filthy state of the ground."

The report in a subsequent part attributes the bad odour felt by the officers in their lines to filth in the nullahs to the north-east of the Barracks.

These nullahs have to my knowledge been a common place of resort to the Natives for purposes of nature; and I think with the wind in the quarter it was between 19th and 20th ultimo, the odour perceptible in the officers' barracks would have been also perceptible in No. 16 soldiers' barracks, from which the nearest parts of the nullahs are not more than four hundred yards distant.

These nullahs are now being shaped and more or less filled up, and, with the police arrangements which have been made, no further nuisance of the kind need be anticipated, I consider.

I think it also probable that there may have been more excrement in some of the shallow water-channels about the officers' lines where the ground has yet to be levelled) at the time that the officers went into them than (when the Committee inspected, there being even then some which had not been removed. I do not, however, consider that the men could have been affected by this in their barracks.

I have &c.,

C. J. HODGSON, COLONEL, R.E.,
Member of the Committee.

HER MAJESTY'S 58TH REGIMENT.

Comparative Statement of Sickness and Mortality in the aboye Regiment since the Meeting of the Headquarters and Right Wing from Darjeeling, the Left Wing from Benares, and the Draft from England, at Allahabad, on the 12th January, 1869, recording each Party separately up to and for the 23rd August, 1869.

Distribution.	Strength.	Diseases.																															
		Cholera.		*Fever.*		*Rheumatics.*		*Diarrhœa or Dysentery.*		*Apoplexy.*		*Paralysis.*		*Small-pox.*		*Erysipelas.*		*Hepatitis.*		*Heart Disease.*		*Dyspepsia.*		*Anæmia.*		*Influenza.*		*Bronchitis.*		*Debility.*		*Venereal.*		*Other Diseases.*		*Total.*	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Headquarters, and Right Wing, ...	337	63	46	132	1	15	...	105	2	7	4	...	...	4	1	2	1	8	...	2	1	22	...	12	...	1	...	3	...	5	...	102	...	107	1	590	57
Left Wing, ...	332	24	16	53	...	13	...	53	3	3	1	2	1	1	...	...	...	21	1	2	1	13	...	10	...	...	...	...	...	4	...	47	...	73	1	319	24
Draft, ...	96	15	11	45	2	1	...	25	...	3	3	...	...	1	...	...	...	1	...	...	...	3	...	5	...	...	...	1	...	...	...	3	...	24	...	127	16
Totals, ...	765	102	73	230	3	29	...	183	5	13	8	2	1	6	1	2	1	30	1	4	2	38	...	27	...	1	...	4	...	9	...	152	...	204	2	1,036	97

CAMP OONCHADEEK:
Dated Allahabad, 24th August, 1869.

D. REID, COLONEL,
Commanding at Allahabad.

E. L. LUNDY,
Surgeon in Medical Chge., 58th Regt.

J. L. J. GORDON, LIEUTENANT,
And Acting Adjutant, 58th Regiment.

C. HOOD, COLONEL,
Commanding H. M.'s 58th Regiment.

Numerical Return of Cholera Cases during the year 1869.

Corps.	Description.	Admitted.		Died.		Discharged.		Total Strength on the 1st March, 1869.
		Cholera.	Choleraic-Diarrhœa.	Cholera.	Choleraic-Diarrhœa.	Cholera.	Choleraic-Diarrhœa.	
Headquarters 25th Brigade, Royal Artillery.	Men, Women, Children,	...	...	...	...	...	...	7
	Total, ...	...	...	...	...	...	...	7
D. 16th Royal Artillery.	Men, ...	8	...	7	...	1	...	130
	Women, ...	1	...	...	...	1	...	14
	Children, ...	...	...	...	...	...	...	22
	Total, ...	9	...	7	...	2	...	166
4-24th Royal Artillery.	Men, ...	2	...	1	...	1	...	73
	Women, ...	...	...	...	...	...	...	8
	Children, ...	1	...	1	...	...	...	16
	Total, ...	3	...	2	...	1	...	97
58th Regiment.	Men, ...	86	16	71	2	15	14	799
	Women, ...	9	...	5	...	4	...	78
	Children, ...	15	3	12	1	3	2	152
	Total, ...	110	19	88	3	22	16	1,029
XI. Bengal Lancers.	Men, ...	1	...	...	...	1	...	297
	Women, ...	...	...	...	...	...	...	...
	Children, ...	...	...	...	...	...	...	...
	Total, ...	1	...	...	...	1	...	297
4th Regiment Native Infantry.	Men, ...	16	...	7	...	9	...	744
	Women, ...	...	...	...	...	...	...	...
	Children, ...	...	...	...	...	...	...	...
	Total, ...	16	...	7	...	9	...	744
Camp-followers, 4th Regiment Native Infantry.	Men, ...	5	...	3	...	2	...	Not known in B. O.
	Women, ...	9	...	5	...	4	...	
	Children, ...	6	...	1	...	5	...	
	Total, ...	20	...	9	...	11	...	

Abstract.

Corps.	Admitted.		Died.		Discharged.	
	Cholera.	Choleraic-Diarrhœa.	Cholera.	Choleraic-Diarrhœa.	Cholera.	Choleraic-Diarrhœa.
Royal Artillery, ...	12	...	9	...	3	...
58th Regiment, ...	110	19	88	3	22	16
Total Europeans, ...	122	19	97	3	25	16
XI. Bengal Lancers, ...	1	...	...	...	1	...
4th Regiment N. I., Sepoys, ...	16	...	7	...	9	...
4th Regiment N. I., Camp-followers,	20	...	9	...	11	...
Total Natives, ...	37	...	16	...	21	...

JAS. TRAVERS, Major-Genl.,
Commanding at Allahabad, and the Division.

Allahabad :
13th September, 1869.

No. 848J., dated Simla, 10th September, 1869.

From—J. L. BRYDEN, ESQ., *Statistical Offr. attached to Sany. Comr. with Govt. of India,*

To—*The* SECRETARY, SANITARY COMMITTEE, *Allahabad.*

WITH reference to his telegram of yesterday, begs to forward tabular statement shewing the statistics of the European troops cantoned at Allahabad from 1859 to 1868 :—

1.—Daily Sick Rate of the Station for the period.

Year.	Period of Observation.	DAILY SICK PER CENT. OF THE AVERAGE STRENTH IN EACH MONTH.												Daily Sick Rate on the average of the Period of Observation.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
1859,	For the year.	4·62	5·00	9·18	14·86	11·31	8·88	7·82	6·54	6·44	8·26	8·34	6·89	8·19
1860,	„	4·90	5·52	5 78	7·74	7·38	9·73	9·56	9·33	13·29	13·24	12·27	7·00	8·80
1861,	„	6·16	6·00	8·30	10·67	10·95	9·41	9·87	10 93	13·14	11·67	8·89	9·01	9·38
1862,	„	7·14	6·17	6·60	7·79	8·79	8·89	10·00	12·15	12·11	10·06	10·90	7·47	9·03
1863,	„	7·30	8·77	7·56	9·15	9·06	8·86	9·38	11·57	9·36	12·25	9·73	5·47	9·01
1864,	„	4·19	4·44	4·87	9·71	8·83	8·43	6·70	6·11	6·27	5·72	4·32	3·18	5·99
1865,	„	3·67	5·00	5·18	4·72	3·89	4·42	3·14	4·73	4·57	3·88	3·90	3·19	4·19
1866,	„	4·84	5·02	4·73	4·01	5·23	3·78	4·43	6·04	7·13	8·94	6·10	4·27	5·39
1867,	„	5·36	5·20	5·59	4·75	3·96	3·51	4·89	4·67	5·52	6·82	5·93	5·95	5·11
1868,	„	6·70	6·81	6·96	4·57	3·76	3·98	4·83	5·97	5·89	5·88	4·82	3·87	5·27

2.—Admission Rate of each year.

Year and Period of Observation.	ADMITTED INTO HOSPITAL PER CENT. OF THE AVERAGE STRENGTH.											Admitted per Cent. of Strength from all causes.
	Cholera.	Heat-apoplexy.	Fevers.	Dysentery.	Diarrhœa.	Hepatatis.	Veneral Diseases.	Ophthalmia.	Rheumatism.	Diseases of the Respiratory Organs.	All other causes.	
1859, for the year, ...	9·50	2·32	139·54	14·09	22·92	6·47	16·25	6·19	3·43	4·96	39·78	265·45
1860, „ ...	2·20	1·22	122·68	5·16	20·85	7·97	32·16	6·05	7·08	8·57	41·87	255·81
1861, „ ...	2·51	·16	79·80	6·97	31·09	14·95	39·62	7·67	9·01	13·31	39·78	244·87
1862, „ ...	None.	·09	82·57	6·23	15·54	15·00	35·50	4·33	16·62	9·75	31·71	217·34
1863, „ ...	5·12	·38	43·55	7·40	19·73	4·36	42·69	3·98	4·74	4·74	30·55	167·24
1864, „ ...	1·37	·11	24·63	5·16	12·74	5·47	28·63	3·16	5·37	4·21	32·73	123·58
1865, „ ...	1·38	·49	28·63	3·65	9·68	5·53	22·90	2·07	8·98	3·55	35·15	122·01
1866, „ ...	·79	·29	55·98	5·98	11·18	5·88	23·63	4·51	8·33	5·30	40·19	162·06
1867, „ ...	2·92	·42	63·88	3·24	8·35	4·28	22·34	2·92	5·95	4·28	44·26	162·84
1868, „ ...	·22	·55	55·39	3·52	11·54	8·35	39·67	3·41	8·02	5·93	48·24	184·84

3.—Death Rate of each year.

Year.	Average Strength in each year.	Total Deaths of each year.	CAUSES OF DEATHS IN EACH YEAR.												Died out of Hospital.	DIED PER 1,000 OF STRENGTH.			
			Cholera.	Small-pox.	Fevers.	Heat-apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatatis.	Respiratory Diseases.	Heart Diseases.	Phthisis pulmonalis.	Wounds and Accidents.	All other causes.		A. Cholera.	B. *All other causes.* 1. In Hospital.	B. *All other causes.* 2. Out of Hospital.	C. All Causes.
1859, ...	2,504	264	129	1	30	32	3	31	14	10	1	...	4	2	7	51·52	53·91		105·43
1860, ...	2,460	114	27	2	20	11	3	22	4	14	3	...	2	...	6	10·97	35·37		46·34
1861, ...	1,277	61	21	4	10	4	1	4	2	6	...	1	4	1	3	16·44	31·33		47·77
1862, ...	1,107	21	...	...	2	1	...	1	4	7	...	2	1	...	3	...	18·97		18·97
1863, ...	1,054	83	44	4	7	1	2	4	2	9	2	1	6	...	1	41·75	37·00		78·75
1864, ...	950	24	12	...	...	1	2	2	...	3	...	...	2	...	1	12·63	11·58	1·05	25·26
1865, ...	1,013	34	10	...	2	4	1	3	1	4	...	2	...	...	4	9·87	20·73	2·96	33·56
1866, ...	1,020	28	6	1	8	3	...	1	...	3	...	1	1	...	2	5·88	19·61	1·96	27·45
1867, ...	958	35	18	...	1	3	...	1	...	2	...	1	3	2	4	18·79	17·75	...	36·54
1868, ...	910	26	2	...	2	4	...	...	...	4	2	2	2	1	4	2·20	23·07	3·30	28·57

See Foot-note.*

This Statement does not include the strength or the deaths of the General Hospital for the years during which it was in existence.

Simla, September, 1869. JAMES L. BRYDEN,

Statistical Offr. attached to Sany. Commr. with Govt. of India.

* Not included in calculating the ratio for the year before 1864. To make the table uniform, the raito of these deaths should be filled in and added to the total.—J. L. B.,

Statistics of the Mortality in the Allahabad District Jail since its commencement on the 20th March, 1867.

Year.	Average Strength.	Total Deaths.	Deaths from Cholera.	Deaths per Cent. of Strength.	Deaths per 1,000.	
1867, ...	559·32	15	...	2·6	26·0	From 20th March (date of establishment of a District Jail in Allahabad).
1868, ...	542·84	9	...	1·6	16·0	

N.B.—During present year, there have been 19 cases of cholera, and 7 deaths therefrom.

Statistics of Sickness and Mortality amongst the Prisoners of the Central Jail at Allahabad for the past ten years.

Year.	Daily Average Strength.	Deaths from all causes.	Deaths from Cholera.	Sick to Strength per Cent.	Deaths to Strength per Cent.	Deaths per 1,000.
1859, ...	1,429·0	204	49	55·5	13·98	139·8
1860, ...	1,594·75	264	9	90·92	16·55	165·5
1861, ...	1,729·71	105	26	67·89	6·07	60·7
1862, ...	1,929·7	53	1	54·07	2·67	26·7
1863, ...	2,232·93	68	5	68·91	3·04	30·4
1864, ...	2,209·61	91	28	52·42	3·98	39·8
1865, ...	2,851·0	55	2	66·17	2·2	22·0
1866, ...	2,405·6	78	...	50·97	3·2	32·0
1867, ...	1,972·0	55	14	41·92	2·7	27·0
1868, ...	1.849·0	36	2	31·41	1·9	19 0

N.B.—The Central Jail was removed from the Allahabad side (present District Jail) to the south side of the Jumna, where it now is, on the 20th March, 1867.

During present year there has been no case of cholera up to date (18th September).

ALLAHABAD:
The 18th September, 1869.

J. RICHARDSON, ASST. SURGEON,
Offg. Supdt., Central Jail, Allahabad.

Dated Allahabad, September 14th, 1869.

SIR,—I have the honour to inform you, in reply to your letter of the 13th, that the registers in my possession only go back to May, 1862. It is not the custom of the Chaplain of the Church of England to register deaths other than that of his own communion, and it appears that previously to my incumbency no register was kept at the cemetery.

I have the honour to subjoin an abstract of the registers now in my keeping.

I have, &c.,
F. C. FAGAN, *Garrison Chaplain.*

Military Deaths from May, 1862, to September, 1869.

	Men.	Women	Children.	Total.		Men.	Women.	Children.	Total.
1862, ...	7	1	6	14	1866, ...	12	0	4	16
1863, ...	45	8	13	66	1867, ...	16	2	7	25
1864, ...	13	1	5	19	1868, ...	17	3	4	24
1865, ...	19	2	7	28	1869, ...	62	3	25	90

Abstract of the Register kept at the Civil Cemetery, Allahabad—(All Denominations).

	No. of Burials.
August to December, 1865, ...	44
Jany. to „ 1866, ...	92
„ to „ 1867, ...	96
„ to „ 1868, ...	86
„ to September, 1869, ...	164

F. C. FAGAN,
Garrison Chaplain.

EAST INDIAN RAILWAY, ALLAHABAD.

Return of Admissions and Deaths from Cholera and other Diseases from the year 1859 *to* 1868.

Year.	Cholera.		Other Diseases.		Average Strength.	Proportion of Deaths from Cholera to Average Strength.	Proportion of Deaths from other Diseases to Average Strength.	Remarks.
	Admissions.	Deaths.	Admissions.	Deaths.				
1859, ...	...	...	105	2	130	...	1·5	Per cent.
1860, ...	1	1	170	5	142	0·6	3·5	" "
1861, ...	3	3	138	1	159	1·8	0·6	" "
1862, ...	...	...	225	...	225	...	...	" "
1863, ...	7	5	238	12	255	1·9	4·7	" "
1864, ...	1	1	240	...	381	0·2	...	" "
1865, ...	1	1	206	2	323	0·3	0·6	" "
1866, ...	...	...	723	6	308	...	0·8	" "
1867, ...	5	2	356	3	310	0·6	0·9	" "
1868, ...	2	1	656	4	327	0·2	1·2	" "
1869, to 31st August,	5	4	720	7	328	1·2	2·1	" " for seven months.
Total, ...	25	18	3,777	42	253	0·6	1·4	For 10 $\frac{7}{12}$ years.

The ratio of deaths to strength among European Troops in Allahabad, appears to be nearly 4 per cent., or double that of the Railway for the past eleven years.

Returns shewing the prevalence of Diarrhœa, in connection with Cholera, on the East Indian Railway, Allahabad, among Europeans and East Indians from 1st January, to 31st August, 1869.

Months.	*Diarrhœa.*		*Colic.*		*Cholera.*		Total.	
	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
January, ...	1	...	1	...	...	...	2	...
February, ...	1	...	...	...	...	...	1	...
March, ...	5	...	2	...	...	...	7	...
April, ...	4	...	1	...	...	...	5	...
May, ...	6	...	1	...	...	...	7	...
June, ...	8	...	1	...	...	...	9	...
July, ...	19	...	5	...	...	...	24	...
August, ...	30	...	4	...	5	4	39	4
Total, ...	74	...	15	...	5	4	94	4

It will be seen how prevalent diarrhœa was before and during the month that cholera appeared.

During the years 1856 to 1865, the following have been the Deaths from Cholera, Dysentery, and other Diseases respectively:—

	Cholera.	Dysentery.	Other Diseases.	Total.
1856, ...	...	...	16	16
1857, ...	80	28	66	174
1858, ...	6	134	256	396
1859, ...	183	45	164	392
1860, ...	64	41	174	279
1861, ...	48	16	119	183
1862, ...	2	2	67	71
1863, ...	100	4	110	214
1864, ...	13	6	70	89
To 2nd April, 1865, ...	11	2	28	41

Deaths from 1827 *to* 1855.

Year.	Deaths.	Year.	Deaths.	Year.	Deaths.
1827, ...	25	1837, ...	22	1847, ...	18
1828, ...	48	1838, ...	20	1848, ...	28
1829, ...	24	1839, ...	15	1849, ...	89
1830, ...	25	1840, ...	12	1850, ...	95
1831, ...	13	1841, ...	14	1851, ...	19
1832, ...	33	1842, ...	28	1852, ...	13
1833, ...	39	1843, ...	72	1853, ...	27
1834, ...	15	1844, ...	114	1854, ...	19
1835, ...	23	1845, ...	115	1855, ...	23
1836, ...	27	1846, ...	46		

These returns from 1827 to 1855 refer to deaths from all causes. During those years, the "cause of death" was not entered in the Chaplain's Register.

The preceding two tables were drawn up by Revd. J. R. Baldwin, Chaplain, 18th August, 1865.

Memo. as to the Mortality in the Fort of Allahabad during the time of the Mutiny.

On the 18th June, 1857,	16	Soldiers and others died.	Brought forward,	56	
„ 19th „ „	21	„ „	On the 25th June, 1857,	2	Soldiers and others died.
„ 20th „ „	7	„ „	„ 26th „ „	1	„ „
„ 21st „ „	3	„ „	„ 29th „ „	1	Engineer (Mr. Mantell).
„ 22nd „ „	6	„ „	In July, 1857, ...	10	Soldiers.
„ 23rd „ „	3	„ „	„ Aug., „ ...	8	„ and Sailors.
„ 24th „ „	...	„ „	„ Sept., „ ...	1	„
Carried forward,	56		Total, ...	79	

The strength of the 1st Madras Fusiliers in garrison during June, 1857, was not much above 200, I believe. One night 20 died (19th June, 1857.)

Entirely free of cholera all through 1858.

1859.		1860.	
In April, ...	18 Deaths from Cholera.	In February, ...	2 Cases of Cholera.
„ May, ...	50 „ „	„ March, ...	10 „ „
„ June, ...	15 „ „	„ April, ...	9 „ „
„ July, ...	9 „ „	„ May, ...	2 „ „
„ August, ...	33 „ „	„ June, ...	... „ „
„ September, ...	3 „ „	„ July, ...	1 „ „
„ October, ...	2 „ „	„ Aug. and Sep., ...	... „ „
„ November, ...	1 „ „		
Total, ...	131	Total, ...	24

As shewing how cholera seemed to cling to a particular part of the Station, it may be stated that in August, 1865, Mr. Eboral, District Engineer, East Indian Railway, died of the disease in the house now being prepared for Government House, another case occurred in the building now used as the Government Secretariat Office, another in the house at present occupied by Mr. Newton, and another in Lowther Castle, the present Government House; all these houses being close together.

ALLAHABAD :
The 16th September, 1869.

JAMES IRVING,
Civil Surgeon.

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on 31 October, 2019